



# NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

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## MBA PROFESSIONAL REPORT

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**Organizational IQ:  
Characteristics Common to Smart Organizations  
and Applicability to the U.S. Military**

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**By: Mark A. Schafer  
December 2009**

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<b>REPORT DOCUMENTATION PAGE</b>			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> December 2009	<b>3. REPORT TYPE AND DATES COVERED</b> MBA Professional Report	
<b>4. TITLE AND SUBTITLE</b> Organizational IQ: Characteristics Common to Smart Organizations and Applicability to the U.S. Military			<b>5. FUNDING NUMBERS</b>	
<b>6. AUTHOR(S)</b> Mark A. Schafer				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Naval Postgraduate School Monterey, CA 93943-5000			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> N/A			<b>10. SPONSORING/MONITORING AGENCY REPORT NUMBER</b>	
<b>11. SUPPLEMENTARY NOTES</b> The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
<b>12a. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; distribution is unlimited			<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (maximum 200 words)</b>  Learning how to build a smart organization was the goal of this project. The objective was to collect and analyze experiential data on how to harness the collective intellect of a group in order to learn and adapt to changing environments. Personal interviews and a questionnaire were used to collect data from seven successful leaders in private industry. The research concluded that there are three necessary attributes of a smart organization. First, smart organizations have a clear strategic vision that has been communicated throughout. Second, smart organizations have a culture of meritocracy that respects each individual's ideas. Third, smart organizations have incentive programs that support the vision and culture. The author concludes that these three attributes are necessary, but not sufficient, to build a smart organization. High organizational intelligence can be realized only when the right people are brought together within a framework of strategic vision, meritocratic culture, and proper incentives. The principles for building a smart organization in private industry can be applied to the military hierarchy without disrupting the discipline and effectiveness of units organized for combat effectiveness.				
<b>14. SUBJECT TERMS</b> Organizational intelligence; Collective intelligence; Smart organizations; Culture of meritocracy; Smart military organizations.			<b>15. NUMBER OF PAGES</b> 89	
			<b>16. PRICE CODE</b>	
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> UU	

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**ORGANIZATIONAL IQ: CHARACTERISTICS COMMON TO  
SMART ORGANIZATIONS AND APPLICABILITY  
TO THE U.S. MILITARY**

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Submitted in partial fulfillment of the requirements for the degree of

**MASTER OF BUSINESS ADMINISTRATION**

from the

**NAVAL POSTGRADUATE SCHOOL  
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# **ORGANIZATIONAL IQ: CHARACTERISTICS COMMON TO SMART ORGANIZATIONS AND APPLICABILITY TO THE U.S. MILITARY**

## **ABSTRACT**

Learning how to build a smart organization was the goal of this project. The objective was to collect and analyze experiential data on how to harness the collective intellect of a group in order to learn and adapt to changing environments. Personal interviews and a questionnaire were used to collect data from seven successful leaders in private industry. The research concluded that there are three necessary attributes of a smart organization. First, smart organizations have a clear strategic vision that has been communicated throughout. Second, smart organizations have a culture of meritocracy that respects each individual's ideas. Third, smart organizations have incentive programs that support the vision and culture. The author concludes that these three attributes are necessary, but not sufficient, to build a smart organization. High organizational intelligence can be realized only when the right people are brought together within a framework of strategic vision, meritocratic culture, and proper incentives. The principles for building a smart organization in private industry can be applied to the military hierarchy without disrupting the discipline and effectiveness of units organized for combat effectiveness.

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## **ACKNOWLEDGMENTS**

Professor Dew and Professor Simon were superb advisors. To Professor Dew, thank you for challenging me to think critically. To Professor Simon, thank you for always having the book, article or nugget of common sense to keep the project moving forward.

I had the good fortune of interviewing brilliant leaders who were gracious with their time and candid with their comments. The discussions on organizational intelligence were not only the core of my research but also profound in my personal leader development. I will remember our conversations as the most insightful revelations during my time in the business school.

The Naval Postgraduate School Foundation provided the introductions for most of my interviews. I am appreciative for the unique opportunities afforded by the foundation and specifically the help in my research.

Most importantly, a special thanks to my family. To Mark for understanding the time away from home to work on this project, and to Anne for being the sounding board of ideas and tirelessly reading every draft, of every chapter. Thank you.



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## I. INTRODUCTION

*When the historians review the events of our day, will the record for our Army at the start of the twenty-first century show an adaptive and learning organization?* – GEN Peter J. Schoomaker, United States Army

### A. ORGANIZATIONAL INTELLIGENCE AND THE U.S. MILITARY

Leading an organization to collectively learn and adapt to a dynamic environment is one of the daunting tasks the military faces today. Not only are the current situations uncertain, the military challenges are complex, exacerbated by the mobile knowledge environment shared by our global competitors. On the counterinsurgency battlefield, today's military is in a multi-faceted "arms race" for legitimate governance of the population, for tactical superiority of the insurgents, and for global perceptions of the United States (Headquarters, 2009). It is a race to *innovate* the ideas and tactics faster than the enemy can innovate.

Organizational intelligence is the ability to harness the collective intelligence of a group. The central idea is to be able to systematically collect the best ideas from the wisdom of everyone involved, and then to transform individual intelligence into a magnified group of organizational intelligence. The sought-after result is the creation and sustainment of collective behaviors that produce strategies and tactics, or products and services, sooner and better than competitors. In a complex, dynamic environment, the positive effects of a smart organization can be more substantial compared to the effects in a stable environment. Learning and adapting faster than the adversary is a decisive advantage in modern warfare. Improving the military's organizational intelligence, or pace of innovation, can become the U.S.'s competitive advantage in asymmetric warfare.

## **B. FRAMEWORK FOR A SMART ORGANIZATION**

This research is an attempt to better understand how organizations harness their collective intellect in order to innovate faster than their competitors. Three elements derived from relevant literature and this research can provide a useful framework for building organizational intelligence:

- A strategic vision to provide clarity of purpose.
- A culture of meritocracy to harness knowledge.
- An incentive program to protect the collective effort.

This framework can summarize the necessary conditions for collecting and employing the wisdom of the group, the purpose being rapid and effective adaptation to changing conditions. While the framework is essential, it is not enough to realize organizational intelligence. How people interact within the framework is the crux of building a smart organization.

## **C. PEOPLE SHARE THE KNOWLEDGE**

The framework provides the building blocks or, the opportunity, to quickly learn and adapt, but having the right people to actually share their knowledge and adapt appears paramount. Getting the right people “on the bus” is the central point to innovating faster than the competitor (Collins, 2001). A combination of selecting the right people and leading them through the framework of collective intelligence can lead to a smarter organization.

## **D. APPLICATION TO MILITARY ORGANIZATIONS**

A challenge to applying a framework of organizational intelligence to the armed forces is that military units are designed to fight and support combat operations, not necessarily to share their collective knowledge. However, that does not prevent the military from incorporating the principles of organizational intelligence into their units. The author proposes specific ways to weave a framework for a smart organization into a squadron-sized military unit.

Specifically,

- How elements of a commander's guidance can encourage knowledge sharing.
- How meritocracy can be included without disrupting the military hierarchy.
- How incentives can support a smart organization through rankings and intrinsic rewards.

The military is burdened with the tasks of providing a *stable* force, ready to answer any call by the Nation, and an *adaptive* force, that is smart enough to learn faster than challenging opponents. The author concludes that the military can meet both requirements by considering the principles of organizational intelligence.

## **E. CHAPTER SUMMARY**

The modern arms race is not only about building an inventory of weapons, it is also about building organizations that learn and adapt faster than the adversary. Indeed, Max Boot (2007) says, "the key to successful innovation, whether for a dictatorship or a democracy, is having an effective bureaucracy." This research culls expertise directly from leaders in the private sector who have proven themselves in competitive industries, partly through their effective bureaucracies. The author proposes a framework to consider for building organizational intelligence and offers specific ways in which the principles that worked in the private industry can be successfully integrated into the U.S. military hierarchy. In the modern race to innovation, squeezing every ounce of knowledge from the armed forces is needed to dominate on today's battlefield.

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## **II. BACKGROUND**

### **A. CHAPTER OVERVIEW**

Intelligence quotient is normally associated with an individual, while organizational intelligence is the collective smarts of a group. This chapter will review the basics of how intelligence is defined and how the term intelligence applies to an organization.

### **B. INDIVIDUAL INTELLIGENCE**

Smart people learn their jobs quickly and are more likely to perform better than individuals without the same mental acuity. That is, higher intelligence leads to better job performance (Schmidt & Hunter, 2000). This does not propose that a high IQ will *lead* to success, nor does it proclaim that a low IQ will *prevent* success. However, there is substantial research showing a correlation between IQ and success.

Intelligence is most simply defined as the ability to learn. Higher intelligence leads to faster learning and the understanding of more complex reasoning (Schmidt & Hunter, 2000). Intelligence can also be referred to as General Mental Ability (GMA), which will be used interchangeably in this introduction.

The empirical evidence supporting the correlation between intelligence and job performance is overwhelming (Gottfredson, 1996). In addition to job performance, higher intelligence improves the odds of success in school, ultimate job level attained, and earned income (Brody & Brody, 1976; Herrnstein & Murray, 1994). The significant effect of GMA is the speed at that an individual acquires job knowledge. The higher the GMA, the faster an individual will learn what they should be doing and how to do it. The effects of high intelligence are stronger as the task becomes more complex (Schmidt & Hunter, 2004).

But how does intelligence transfer organizationally? Specifically, are there characteristics of an organization that allow the entire group to collectively learn quickly and consequently perform better than a slow-learning organization?

## C. ORGANIZATIONAL INTELLIGENCE

The collective intelligence of a group is an elusive quality to measure. The human interaction does not sum algebraically—two people are not necessarily twice as smart as one person in the context of collective intelligence. In fact, some argue that if one took the average IQ of a group of smart individuals, the collective IQ would be lower than the algebraic average. So what are the theories to improving an organization's collective intelligence?

### 1. Defining Organizational Intelligence

Organizational intelligence (OIQ) is similar to *individual* IQ but framed at the organizational level (Halal, 1997). *OIQ measures the entire organization's ability to learn and adapt to the environment.* William Halal defined organizational intelligence as the capacity of an organization to develop its own knowledge and use the knowledge appropriately. Mendelson and Pillai (1999) define OIQ as analogous to individual IQ but viewing the organization as an organism that grows and adapts to a changing situation.

An important distinction between IQ and OIQ is the ability to influence an organization's intelligence. *Where an individual's intelligence is inherent, an organization's intelligence can be molded* (Hansen, 2003). This distinction is what makes the study of organizational intelligence so relevant to any company, unit, or group seeking to excel in dynamic, complex environments. Studies have concluded that certain traits are common to smart organizations, and some studies suggest specific levers to encourage those traits. However, the studies have reached different conclusions. Subsequent paragraphs will outline the researched conclusions that will set the stage for this report's data collection. Before discussing some of the solutions, the background will discuss why building a smart organization is so elusive.

### 2. Challenges to Building A Smart Organization

Why is it that a group of smart people does not necessarily create organizational intelligence? Nearly everyone has experienced collective stupidity. It is the phenomena when a group of intelligent people work together so poorly that the outcome is worse

than if one smart person had been working alone (Albrecht, 2003). Sometimes considered “group think,” there are instances where ideas are harnessed to create a brilliant solution and other instances where the discord is destructive rather than insightful.

Karl Albrecht, an author and management consultant, argues that there are two kinds of collective stupidity, learned and designed-in. The learned stupidity occurs when individuals are prohibited from their independent thought. The controls placed on the group teaches them not to think. Designed-in stupidity occurs when rules and processes inhibit creative, independent thought (Albrecht, 2003).

#### **D. HOW TO BUILD A SMART ORGANIZATION**

Part of the fascination with organizational intelligence is that there are many compelling arguments about what makes an organization smart. Experts have developed principles to follow, levers to pull, and inherent traits to recruit.

##### **1. SmartOrg’s Nine Principles of a Smart Organization**

David and James Matheson, the co-founders of SmartOrg management systems, conducted multiple studies related to best practices and a companies’ ability to adopt the best practices. They identified characteristics of companies that were successful and labeled them the “nine principles” of smart organizations, shown in Figure 1. The “smartness” of an organization was measured on the adherence to the nine principles.



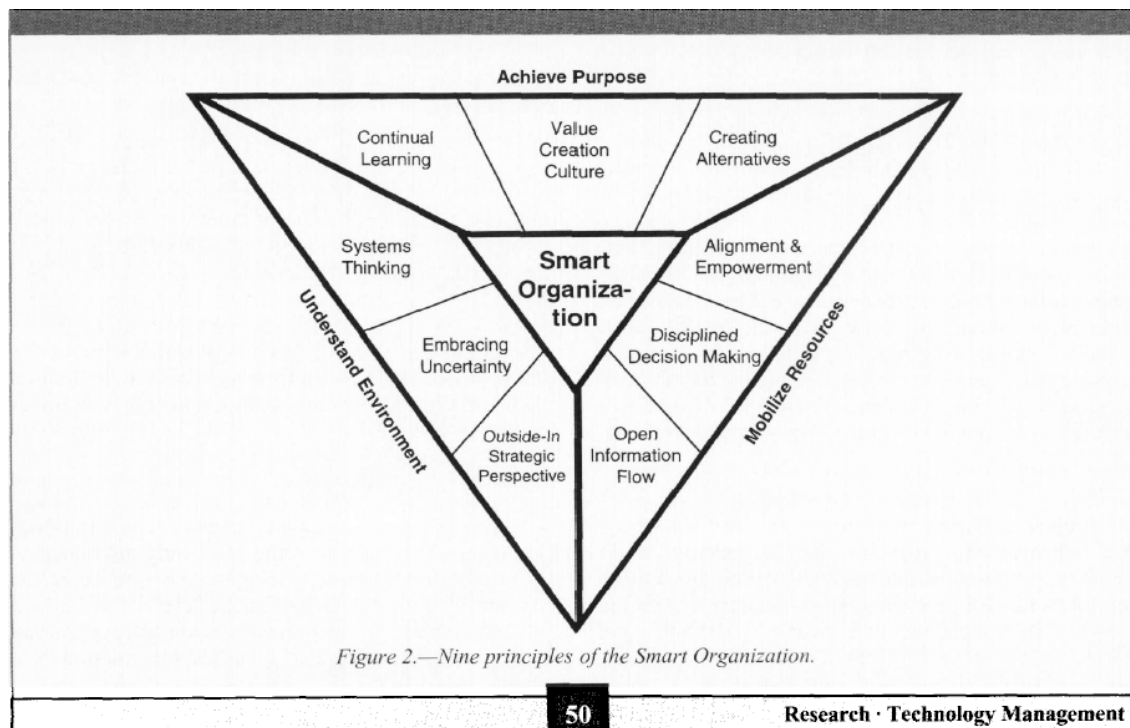


Figure 1. SmartOrg's nine principles of the smart organization (From Matheson & Matheson, 2001)

**a. Achieve Purpose**

Providing an overall purpose that is embraced by the company is the foundation of an organization willing to make the changes to adapt to the environment. Value creation is the persuasive argument for making the change and overcome the barriers institutionalized over time. Creating alternatives provides the choices from which to select the best value creation path. Continual learning is when an organization is not threatened by change and exhibits willingness to identify opportunities and create more value (Matheson & Matheson, 2001).

**b. Understand the Environment**

Understanding the environment involves how to view, think and react to the environment in and around the organization. Embracing uncertainty recognizes the realities of the situation to make sound decisions. An outside-in strategic perspective characterizes a smart organization as one that explores the big picture of the industry then works inward towards the company solutions. Because some of the most strategic

situations are complex, smart organizations use systems thinking to analyze the long-term consequences of decisions (Matheson & Matheson, 2001).

***c. Mobilize Resources***

Smart organizations demonstrate that they have disciplined decision-making processes, empower subordinate decision makers, and encourage information exchange. Disciplined decision making requires a commitment to employ systematic processes to reach decisions based upon quality input and to garner the support of those providing the input. A smart organization aligns the workforce with the goals of the company and empowers them to execute their duties, unburdened by stifling bureaucracies. Open information flow eliminates the culture and processes that hoard information. Smart organizations encourage, even demand, unrestricted information flow to all parts of the organization (Matheson & Matheson, 2001).

In summary, the nine principles are three sides of a triangle that describe how a smart organization thinks through problems and motivates people to that end. The principles make sense but the research that led to those conclusions is vague. Since the SmartOrg system scores the nine principles, the testing could be a diagnostic tool for identifying strengths and weaknesses in an organization's collective intelligence.

**2. Albrecht's Seven Traits of Organizational Intelligence**

Karl Albrecht's seven traits of organizational intelligence are intended to provide a framework for observing an organization, not categories to be scored like Matheson's nine principles. Each of the seven traits has antecedents, such as core values or competent leadership, that influence the traits. Figure 2 is a graphic of the seven traits of organizational intelligence.

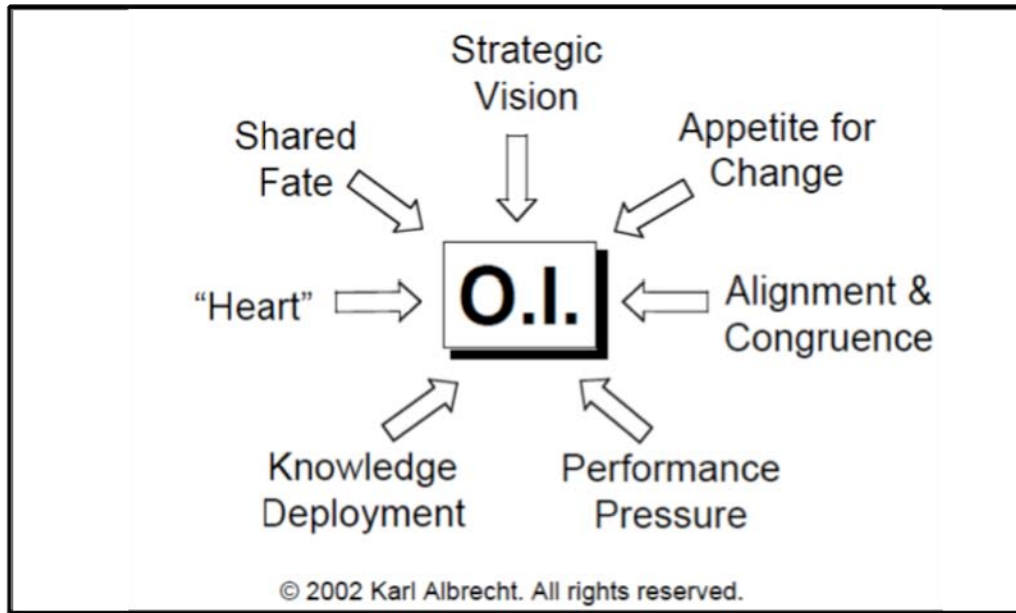


Figure 2. Albrecht's seven traits of organizational intelligence (From 2003)

**a. Strategic Vision**

Strategic vision is the organizing principle that leaders use to express the purpose of the effort. The ability to create, adapt and communicate a vision is a trait, not necessarily the details of the vision (Albrecht, 2003). Albrecht clarifies that it is important to recognize whether there is a vision and not to over-analyze the content of the vision when reviewing organizational intelligence.

**b. Shared Fate**

Shared fate is the esprit de corps that develops when the people involved in the organization have a sense of the common purpose and recognize that they are all in it together. Synergy can develop with a sense of shared fate (Albrecht, 2003).

**c. Appetite for Change**

Appetite for change welcomes the opportunity to take on something new and learn new ways to succeed. While the ideas of change can be threatening, an organization needs a willingness to adopt the changes outlined in the strategic vision to be considered smart (Albrecht, 2003).

***d. Heart***

“Heart” is the extra effort the employees are willing to contribute because they identify with the success of the organization. The willingness to contribute “discretionary effort” is a dimension of an organization’s intelligence (Albrecht, 2003).

***e. Alignment and Congruence***

Alignment and congruence of the explicit and implicit operating procedures are essential for intelligent work interactions. The rules for interacting and assigning responsibilities should enable cooperation. Sometimes the operating procedures are problems in themselves and need to be addressed before a solution can be developed (Albrecht, 2003).

***f. Knowledge Deployment***

Knowledge Deployment includes the capacity to create, organize, and share the intellect of an organization. It is important to recognize that how the people interact is more important than how the technological infrastructure is established. Knowledge deployment is about the capacity of the organization’s culture to make use of its intellectual resources (Albrecht, 2003).

***g. Performance Pressure***

Performance pressure is created by peers holding each other accountable for their role in the organization’s success. This helps to create a shared sense of urgency to contribute to the mission (Albrecht, 2003). Albrecht’s description of performance pressure is different from a chief executive officer’s pressure to meet shareholder expectations.

In summary, Karl Albrecht observed these seven traits in organizations that were able to break down the barriers among pockets within an organization.

**3. Synesis’ Five Principles of Organizational IQ**

Synesis, a senior management consulting company, has concluded that there are five main principles that support organizational IQ, based upon collaborative research

with Stanford University, Augsburg University, and McKinsey & Co. Figure 3 depicts the principles and offers levers used to influence organizational IQ.

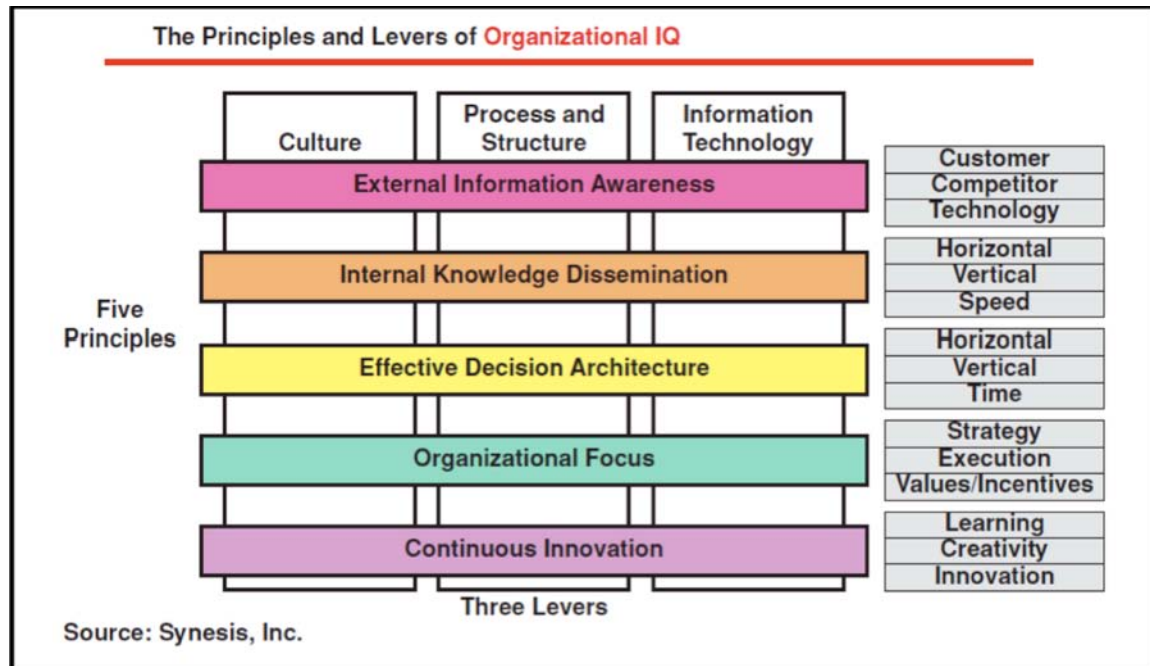


Figure 3. Synesis' principles and levers of organizational IQ (From Hansen, 2003)

**a. External Information Awareness**

External information awareness refers to an organization's personal contact and awareness of their customer needs, competitor's positioning, and the technologies in their field. The organization needs receptors tuned to the external environment (Mendelson, 2000). In general, the less intimate the awareness, the less successful the firm (Hansen, 2003).

**b. Internal Knowledge**

Internal knowledge dissemination is the vertical and horizontal flow of pertinent information. Getting the right information, to the right people, in a timely manner is indicative of a smart organization (Hansen, 2003).

*c.      Effective Decision Architecture*

Effective decision architecture includes delegating decision making to the individuals with the best information and perspectives. Traditional hierarchies require information to flow up to management for a decision (Mendelson, 2000). In that process, the critical insights from frontline workers can be lost (Hansen, 2003).

*d.      Organizational Focus*

Organizational focus is the principle that every organization must narrow the scope of their effort on a few priorities (Hansen, 2003). Simply put, depth is more important than breadth.

*e.      Continuous Innovation*

Continuous innovation embraces ideas for improvement and takes decisive action. The organizations that scored poorly neither took action on suggested improvements nor embraced the ideas as they were developed (Hansen, 2003).

**E.      THE INFLUENCES ON ORGANIZATIONAL INTELLIGENCE**

Since organizational IQ, unlike an individual's IQ, can be shaped and influenced, identifying the levers to pull is important. The concept is to use the levers to improve an organization's adherence to principles, or traits, of an intelligent organization.

**1.      Synesis Levers**

Figure 3 showed the three levers that support the five main principles advocated by Synesis. The levers of culture, process and structure, and information technology all must be pulled into close alignment with the five principles. The three levers are mutually supportive such that when properly used, the computer systems (information technology) support the processes within the organizational structure, that enables the company culture to flourish. These three elements all work toward the desired results in the five principles of external information awareness, internal knowledge dissemination, effective decision architecture, organizational focus, and continuous innnovation (Hansen, 2003).

## **2. Albrecht Enablers**

Albrecht offers four key enablers for moving an organization to higher levels of collective intelligence. Deploying these four enablers will nurture the adaptability and responsiveness of the organization.

### ***a. Thought Leaders***

These individuals are able to see beyond the existing paradigm of structure and process. The thought leaders are able to separate the wheat from the chaff and are normally effective in whichever job they are placed. To improve the collective intelligence, executives must identify, develop, and deploy the thought leaders for positive change in the organization (Albrecht, 2003).

### ***b. Communities of Interest***

Discussion groups, informal meetings, and other community-building mechanisms can be cultivated for a specific purpose. The combination of a thought leader and a well-organized community can be effective in bringing about positive change (Albrecht, 2003).

### ***c. Ad-hocracies***

The selective use of small, well-focused teams led by thought leaders can be powerful and effective. However, ad-hocracies can create a disruptive layer of bureaucracy outside of the normal structure if too many special teams are formed to solve problems (Albrecht, 2003).

### ***d. Knowledge Platforms***

The information technology that supports a desired change towards becoming an intelligent organization can be powerful. But, rather than a pillar of change, the knowledge platforms support the efforts of the thought leaders, communities of interest, and ad-hocracies (Albrecht, 2003).

## F. PROOF THAT SMART ORGANIZATIONS ARE SUCCESSFUL

Empirical studies show that generally accepted measures of organizational intelligence correlate positively with business performance. Smart companies perform better.

When measured in the computer and electronics industry, clearly a sector that requires smart people, the results were “strong and unequivocal” that organizational IQ correlated to profitability and company growth (Mendelson & Pillai, 1999). Perhaps just as significant are the findings that high-IQ organizations perform more consistently and that high organizational IQ is a leading indicator of performance (Matheson & Matheson, 2001).

Figure 4 shows a Synesis study of organizational IQ performance correlation with financial performance. Data from 1993 show a strong correlation ( $R^2=0.67$ ) between OIQ and business performance. This finding supports the theory that organizations that demonstrate the principles discussed above perform better than companies that do not (Hansen, 2003).

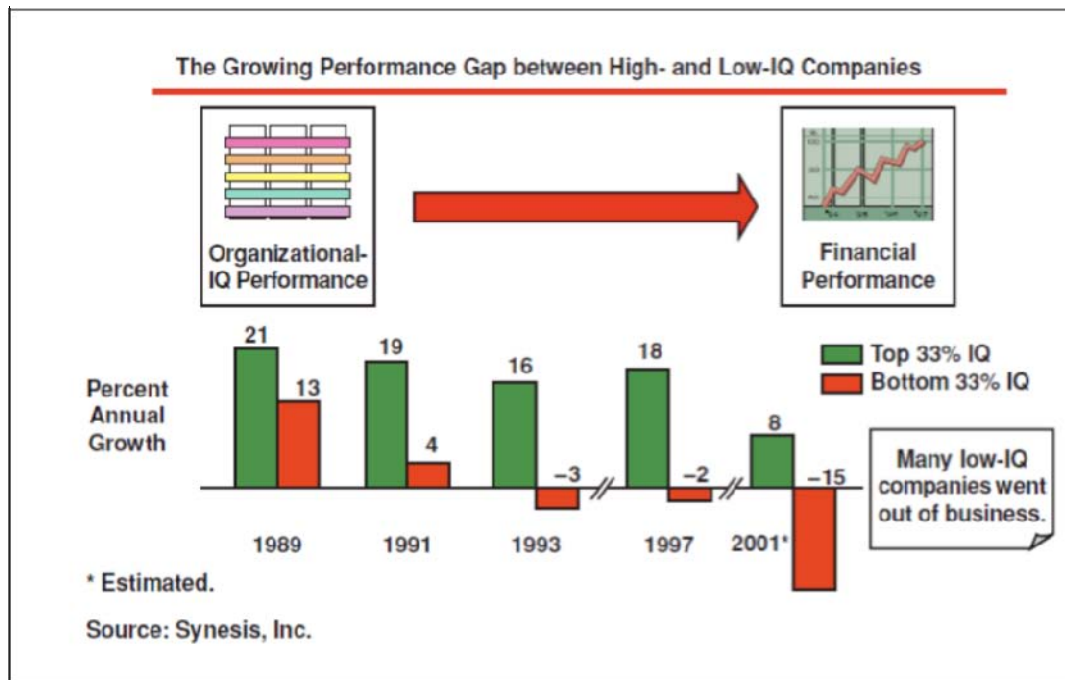


Figure 4. Organizational IQ correlation with financial performance (From Hansen, 2003)



Company growth, profitability, consistency and prospects of future performance are compelling reasons to review an organizations collective intelligence. For those reasons, it is worthwhile to explore how to influence, or improve, an organization's IQ.

## **G. CHAPTER SUMMARY**

Chapter II provided an overview of three prominent theories of the principles one must follow to build a smart organization. All the theories assume some fundamental antecedents such as sound leadership and a competent workforce. Most importantly, unlike one's individual IQ score, an organization's intelligence can be influenced to make it smarter than it would be otherwise. The theories offer ways to shape an organization's intelligence. Using this chapter as a background, the research will attempt to corroborate the previous research and flesh out examples to emulate.

### III. DATA COLLECTION AND RESULTS

#### A. CHAPTER OVERVIEW

Using Chapter II as a starting point, this research intends to use qualitative analysis of interviews with select leaders from private industry. To complement the interview questions, a questionnaire was developed to provide basic empirical data with the added effect of providing some structure for the interviews. This chapter will explain the origin and methodology of the data collection and will summarize the results of the data collected. Initial analysis will set the scene for detailed analysis in Chapters IV, V, and VI.

#### B. DEVELOPING THE DATA COLLECTION QUESTIONS

In order to conduct the interviews with an informed background, the main ideas of Chapter II were aggregated in a table. Table 1 compares the principles discussed in Chapter II by placing similar traits in a common row of the table.

SmartOrg's Nine Principles	Albrecht's Seven Traits	Synesis' Five Principles
Open information flow	Knowledge deployment	Internal knowledge dissemination
Continual learning & Embrace uncertainty	Appetite for change	Continuous innovation
Disciplined decision making		Effective decision architecture
	Strategic vision	Organizational focus
Alignment & empowerment	Alignment & congruence	

Table 1. Comparison of organizational intelligence theories (After Matheson & Matheson, 2001; Albrecht, 2003; Hansen, 2003)

Comparing leading thoughts on how to build a smart organization, only “knowledge sharing” and a “willingness to adapt” are found in all three writings. The traits that involve decision-making, strategic vision and alignment are advocated by two out of the three theories discussed in Chapter II. These traits merit exploration in the data collection. The studies reviewed in Chapter II are neither congruent nor contradictory. The proportions of overlapping traits are summarized below.

- Matheson’s nine principles: 5 out of 9 (56%)
- Albrecht’s seven traits: 4 out of 7 (57%)
- Synesis’ five principles: 4 out of 5 (80%)

The data collection tools were built to complement each other by first asking open-ended questions, then ranking a list of organizational traits. The interview questions were intended to be a loose framework to guide a free-form discussion on what it took to build a smart organization. The questionnaire was intended to distinguish the most important traits of a smart organization and prompt a discussion in terms already researched in Chapter II.

### **C. THE INTERVIEW QUESTIONS**

An opening script was used to begin the discussion with an emphasis on getting a group to work towards collective intelligence. The questions were intentionally vague to allow the interviewees to “paint on a naked canvas” for the first half of the interview. It was expected that by starting with a clean slate, without prompting the interviewee with the background discussed in Chapter II, the ideas would offer fresh insights to consider. The second half of the interview was meant to focus on the questionnaire. The interview questions are listed below and can be found in Appendix A.

- Are there any divisions or elements in your organization that stand out as being smarter than others?
- If you look around the broader business world, what organizations come to mind as having a higher IQ than others?
- What do you think are the best indicators to use to judge the IQ of an organization?
- What kind of culture do smart organizations have?

- In your experience, how do intelligent organizations handle employee hiring and retention differently than less intelligent ones? Do HR policies make any difference?
- To what extent do you think an organization's intelligence is contingent on other factors?
- Introduce the questionnaire.
- In sum—in your view—what does a smart organization look like?

#### **D. THE QUESTIONNAIRE**

A list of questions was developed to build upon this informed foundation and to extrapolate details, particularly with anecdotal evidence, of how to build a smart organization. With this end state in mind, 10 attributes were listed and a five-item Likert scale was used to explain the extent to which each attribute affected organizational intelligence (see Appendix B). The Likert scale ranged between “not important” to “very important.” However, the first interviewee pointed out that all the attributes were very important, and that if an organization got any one of the attributes wrong, it could collapse the entire venture. This prompted a change in the questionnaire for the subsequent interviews.

The questionnaire used in six of the seven interviews provided a list of 12 attributes of an organization. It was recognized that each attribute was important, acknowledging that none of the 12 attributes could be ignored. The interviewees were asked to rank three attributes as priority ONE and three attributes as priority TWO. Six attributes were not ranked, left blank, to indicate they were of routine priority. The goal of the questionnaire was to distinguish the really-important from the just-important, and then discuss. The questionnaire sheet can be found in Appendix C and summarized below.

The questionnaire was developed based upon the information summarized in Table 1 and from the author's speculation on additional factors that contribute to organizational intelligence. The author's additions included questions about the size of an organization, its training regimen, and its use of technology.

## **1. Attributes in the Questionnaire**

Annotate three priority “1,” three priority “2,” and leave 6 blank regarding the extent to which each of the following has a perceived positive effect on organizational intelligence.

- Highly competitive environment
- Proper sizing of the organization
- Strategic vision—Organizational focus
- High use of technology for work and interaction
- Proper decision architecture
- Incentives and rewards
- High knowledge sharing culture
- Networked with partners
- Formalized training program
- Culture of innovation
- Flat organization structure
- Attuned to external environment

## **E. SELECTION OF THE INTERVIEWEES**

Interviewees were selected based upon the author’s direct or first-hand familiarity and their individual accomplishments in private industry. An attempt was made to have a diverse sample of accomplished individuals. Face-to-face interviews were desired so proximity to Monterey, California, was a limiting factor.

The interviewee’s ages ranged between 38 and 71. Their accomplishments ranged from being the current president of a start-up company to a former 20-year president and CEO of a fortune 500 global corporation.

## **F. CONDUCT OF THE INTERVIEW**

The author conducted seven interviews spread out unevenly over five weeks. The setting was always informal, choosing to meet for coffee, over lunch, or at the interviewee’s home. The time allotted for the discussion ranged from 45 minutes to over

three hours, all based upon the interviewee's schedule. All but one interview was face-to-face, and the personal interaction was helpful in trying to judge how to proceed with the discussion. An audio recording device was not used so as not to disrupt the candid discussion. All notes were handwritten.

Because the interview format was loosely structured, there was a learning curve, and the exact phrasing of the questions was an iterative data collection tool. The author deliberately chose a discussion-style format that proved helpful in recording anecdotes from the interviewee's personal experiences. However, it was discovered that adhering to a set of questions for all of the interviewees was a difficult task. While the discussion of smart organizations cannot be divorced from the discussion of building effective organizations, the distinction was expectedly blurred and difficult to extract from some dialogue. The benefit of the loose structure was that the interviewees sometimes led into areas of organizational intelligence that the author had not considered. However, a pitfall in the open format was the potential for the conversation to stray away from the research data trying to be collected. The questionnaire provided a perfect segue to either focus more on organizational intelligence or spark a new anecdote.

The questionnaires were self-explanatory to the interviewees. The author chose to pass the questionnaire and pen to the interviewee and provide minimal context for the questions. Most interviewees quickly selected three priorities then mulled over the next three. Depending upon time available, the author attempted to walk down the list of 12 attributes for comment.

An important closing question was, "In your view—what does a smart organization look like?" More than once, this prompted a succinct summary of the interviewees' ideas and experiences.

The author conducted only seven interviews due to time available to complete the analysis of the data collected. The more interviews the better and 10 would have been a good number. However, after six interviews, the author had formed an opinion on the data collected to date. The seventh interview provided supporting evidence to the author's conclusions.

Going into the interviews, there was an expectation of the result. Based upon the background research in Chapter II, a logical expectation was that each interviewee would say that a smart organization has the following traits:

- A clear strategic vision. Everyone knows where they are going.
- Alignment with the vision. Everyone is on the bus.
- Open information flow. Everyone shares his or her knowledge.
- A culture of adaptation. Everyone expects and embraces the change.
- An effective decision architecture. All decision makers are empowered to make the call.

## **G. INTERVIEW RESULTS**

The results of the interview discussion were varied, as expected, and are difficult to properly summarize without losing much of the information. The initial analysis in this chapter and the detailed analysis in Chapters IV, V, and VI will include the most relevant interview data collected. Recognizing that distilling a lengthy discussion into a short sentence will miss relevant information, Table 2 is a summary of the significant take-away from each interview.

Interview #1	Create the environment where each individual's ideas are valued and rewarded.
Interview #2	Select the right people, who can assess inherent risk, follow a vision, communicate well, and adapt to changing environments.
Interview #3	Establish incentives, supported by accurate reviews that work toward well-defined objectives and a grand cause.
Interview #4	Communicate a clear vision and reinforce the values and credo of a global company rooted in small company mentality.
Interview #5	Improve collective intellect through a culture of meritocracy and clarity of purpose.
Interview #6	Align incentives around a vision that focuses effort and removes the noise of distractions.
Interview #7	Declare expectations to encourage ideas and informed support of decisions.

Table 2. Summary of interview themes

The most consistent ideas discussed were the importance of living the proper values to improve group interaction, and getting the incentives aligned with the strategic vision and values of the organization. Once the questionnaire was introduced to the interviewee, a common discussion revolved around establishing a clear strategic vision to move everyone in the same direction.

## H. QUESTIONNAIRE RESULTS

The questionnaire results were easier to measure than the interviews. Figure 5 is a graph that summarizes the questionnaire results.

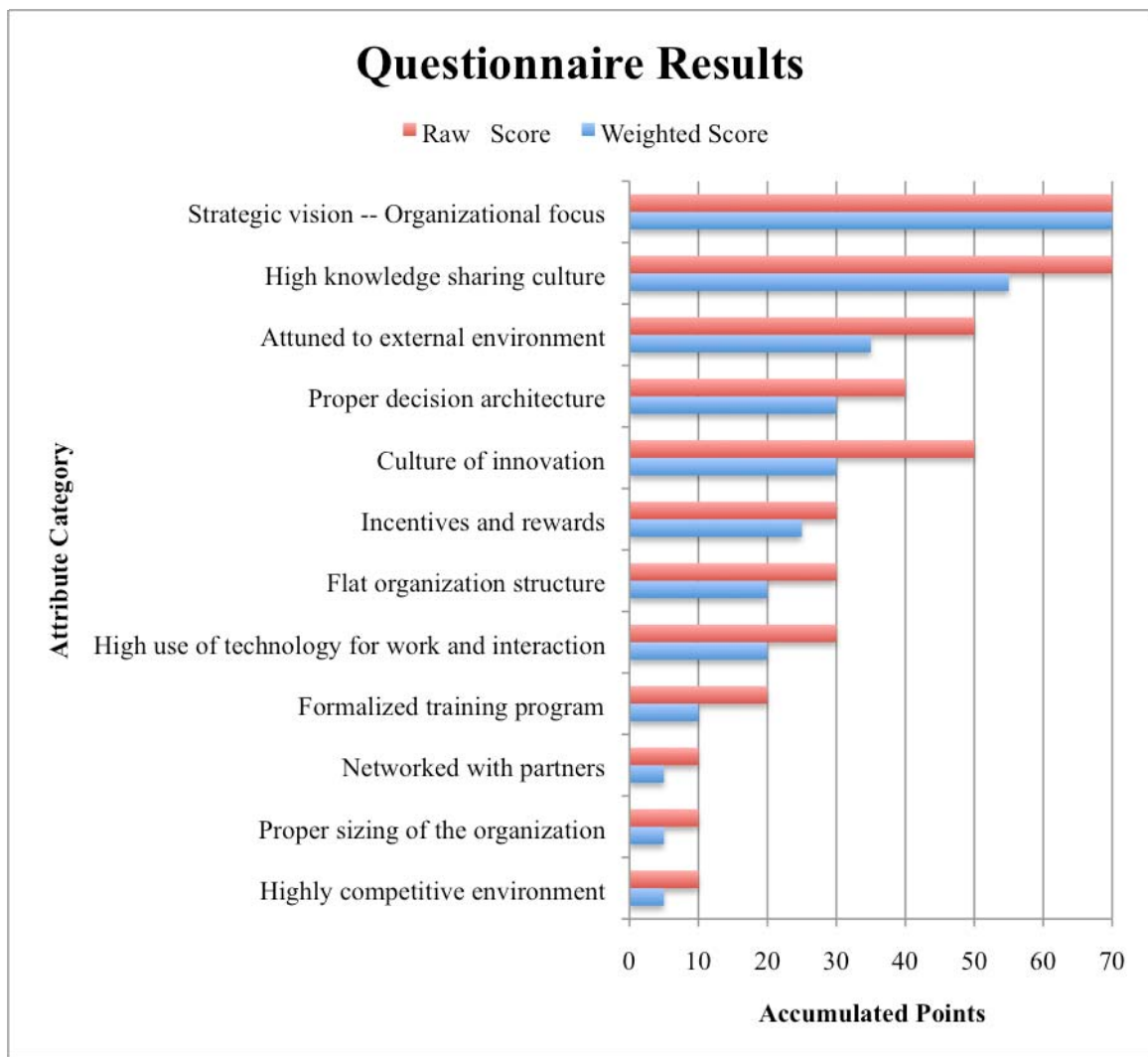


Figure 5. Summary of questionnaire results



The data results can also be found in Appendix D. There are two sets of results in Figure 5, a raw score and a weighted score.

### **1. Raw Score**

The raw score is a binary result indicating whether the interviewee ranked the attribute in the top half of priorities or not. If a respondent marked an attribute as either priority one or two, the attribute was given a raw score of one. If the attribute was not marked, indicating routine priority, it was given a score of zero. The raw score was multiplied by 10 to easily compare with the weighted scores. The maximum raw score possible is 70, indicating all seven interviewees scored an attribute either priority one or two.

### **2. Weighted Score**

The weighted score valued a priority one ranking more than a priority two ranking. Each priority one scoring was weighted for ten points, each priority two earned five points. Routine priorities earned zero points. The weight values were assigned arbitrarily for simplicity. The maximum weighted score possible is 70, indicating all seven interviewees scored an attribute as priority one.

While this research was not based heavily upon empirical results, the universal response marking “strategic vision—organizational focus” as priority one is noteworthy. “High knowledge sharing” was marked priority one or two by each interviewee that placed it a close second place to strategic vision. No matter how the scores were weighted, “strategic vision” and “high knowledge sharing culture” were regarded as high priorities to building a smart organization.

### **3. Questionnaire Analysis**

The least-selected attributes were discarded from further analysis. While important to a high-performance organization, these attributes did not distinguish themselves as instrumental to building a smart organization. Therefore, “formalized

training program,” “networked with partners,” “proper sizing of the organization,” and “highly competitive environment” will not be emphasized in further analysis and conclusions.

## **I. QUALITATIVE ANALYSIS OF THE DATA**

The questionnaire results and interview dialogue both support "strategic vision" and "high knowledge sharing" as important to collective intelligence. The questionnaire and interview data are mutually supportive in distinguishing these two attributes as important in building a smart organization. The attributes that placed three, four and five in the questionnaire results were not consistent with the emphasis during the discussions. Most significant was the amount of discussion on ensuring that incentives and rewards were supportive of the organization's effort to harness the collective intellect. Despite the differences between the questionnaire scores and the interview data, the results do not appear to be contradictory. The questionnaire data fairly represent the emphasis of the interviewees when interpreted in a graphic. Figure 6 is the author's interpretation of which attributes influence each other.

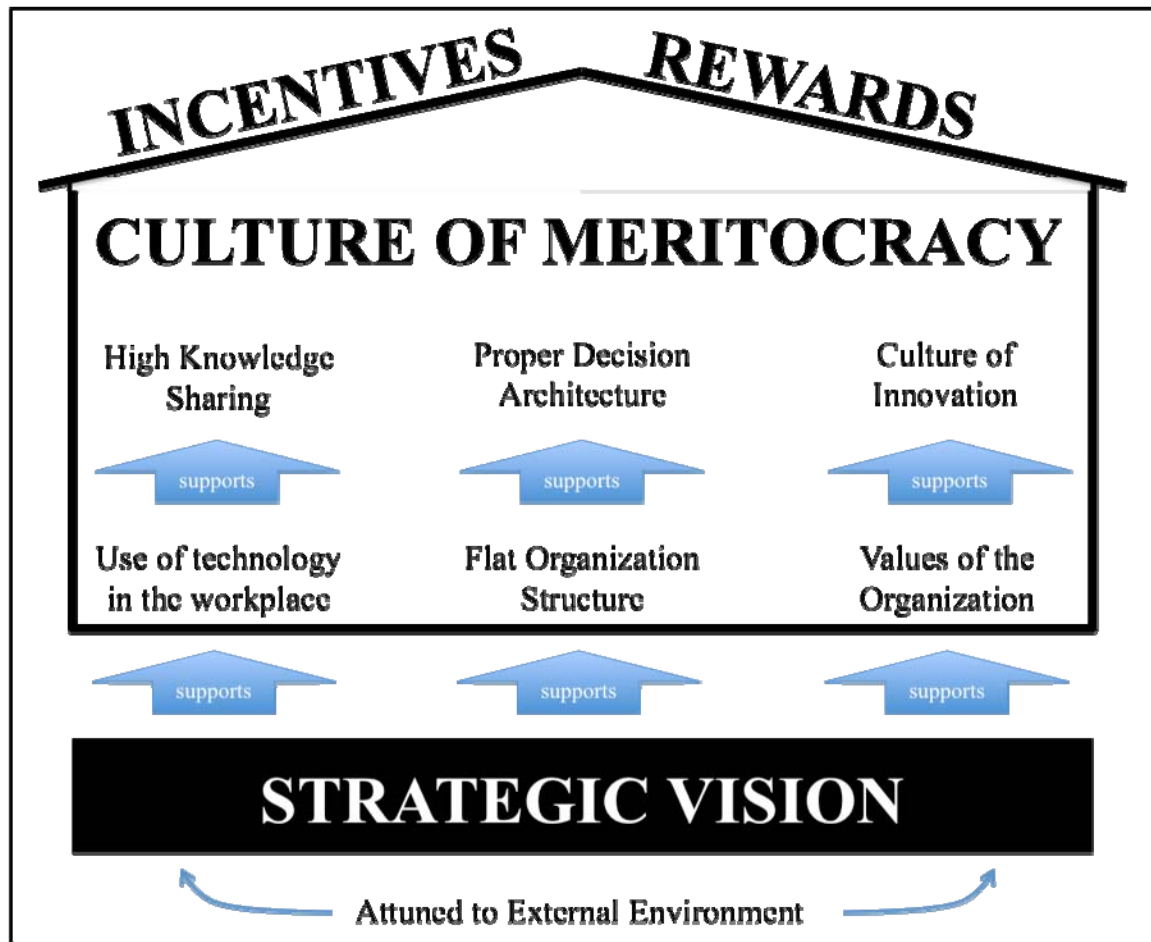


Figure 6. Influences of each attribute in a smart organization

The influence diagram in Figure 6 is one way to view how the different attributes of a smart organization influence each other. Starting from the bottom of the diagram, the external environment should directly shape the strategic vision of an organization, i.e., extent to which a strategic vision “fits” or is congruent with relevant external environmental factors. A smart organization will have the discipline to stay attuned to the surroundings so that the organization works towards a product or service that is in demand by some entity.

Further analysis will describe Figure 6 as a metaphorical house. The strategic vision is the foundation that supports the figurative building that is a culture of meritocracy. Within this building are components that influence each other in creating a culture of meritocracy. The use of technology in the workplace, especially Web 2.0

tools, appears to positively support knowledge sharing. A flat organizational structure is conducive to placing decision-making authority to those who are closest to the issue. The flat structure can also support knowledge sharing because of the horizontal communication opportunities in such a structure. The values of an organization play a dominant role in fostering a culture of innovation and meritocracy. All six of the attributes within the building were discussed in the interviews as having a profound impact on what the author describes as a culture of meritocracy.

The incentives and rewards protect the efforts to build a culture of meritocracy. While the proper rewards do not drive a behavior towards collective intelligence, improper rewards could be destructive to positive efforts. So getting the incentives and rewards synchronized with the vision and culture is an important part of a smart organization. The incentives and rewards are the roof that protects the building and foundation.

## **J. CRITIQUE OF THE DATA COLLECTION METHOD**

### **1. Strengths in the Data Collection Method**

The collection method of using a simple questionnaire integrated with a loosely structured interview was effective in drawing out insightful anecdotes. The experiences shared generally correlated with the questionnaire results. The discussion also provided the opportunity to add context to questions that if left to stand alone, could have had different meaning to each interviewee.

### **2. Weaknesses in the Data Collection Method**

The interviews were subjective and appeared to be heavily influenced by the dialogue provoked by the author. While an attempt was made to remain neutral so the interviewee could in the author's words, "paint on a naked canvas," the dialogue certainly influenced the discussion. The interview documentation was note taking by the author and was subject to the author's discretion to decide which elements of the interview were note-worthy and which were not.

### **3. Recommendations to Improve the Data Collection**

The most glaring shortcoming in the data collection is the limited number of samples taken. The data would have been stronger with more perspectives and anecdotes to consider. To increase the number of people interviewed and to balance the subjectivity, future research should consider multiple authors. Selection of a good interviewee is also important. The very senior executives—those who primarily sit on board of directors now—provided fewer anecdotes relevant to the daily execution of trying to harness the collective intellect of a group. Accomplished leaders who recently departed, or were still in the daily grind of their profession, provided the most supportive interview data.

### **K. CHAPTER SUMMARY**

This chapter explained how the interview questions and questionnaire were developed, data were collected, and from whom it was collected. The interviews were summarized with a general theme of each discussion and the questionnaire was summarized graphically. The author's interpretation of the data is depicted as a house with a foundation, framework, and roof representing strategic vision, culture of meritocracy, and proper incentives and rewards, respectively. The discussions and questionnaires distinguished strategic vision, a high knowledge-sharing culture, and incentives and rewards as the three main elements of a smart organization. Chapters IV, V and VI will discuss each part in detail.

## IV. STRATEGIC VISION

### A. OVERVIEW

Providing a clear strategic vision is the foundation for building a smart organization. In the house metaphor, the more stable the foundation, the better it will support the structures that will be built upon it. Figure 7 shows the foundation upon which the structure and roof will be built upon.



Figure 7. The figurative *foundation* of a smart organization

How well the strategic vision is implemented affects the organizational intelligence—i.e., process matters. In terms of necessity or sufficiency, the strategic vision is a necessary influence because organizational intelligence appears to need a unifying conduit to draw together different components. In short, employees must *want* their knowledge and behaviors to be shared to produce superior results. However, a strategic vision alone does not assure a smart organization. This chapter discusses three components of a strategic vision that provide the potential for building a smart organization.

### B. COMPONENTS OF STRATEGIC VISION

After the first two interviews, it became clear, according to this sample of business people, that strategic vision is the number one priority for building a smart organization. The details of what each interviewee meant in terms of vision is both

interesting and relevant to this research. This chapter begins with the elements of a strategic vision that create a foundation for building a smart organization.

Every executive interviewed declared that articulating a strategic vision was the most important element of building a smart organization. Not only is it the obvious, “you’ve got to know where you are going,” but it is also the foundation upon which all other elements build. As the President and CEO of a Fortune 500 technology corporation for 20 years, Subject D described the strategic vision as so important that it was the one decision he could not delegate down to the subordinate companies. While the vision should be developed by the respective company, it was *critical* that he understood and supported the direction each company in the corporation was working towards (personal communication, October 1, 2009). Other aspects of the company need to be delegated to the appropriate level, but approving the direction of the strategic vision rested on the shoulders of the chief executive officer. Understanding the importance of a vision is one thing. Exploring the components of a vision that fosters a smart organization is the next step.

The interviews highlighted three important factors to developing a strategic vision that will help build a smart organization:

- The vision has to provide clarity of purpose.
- The vision has to provide inspiration to the value being created.
- The vision needs to be deeply communicated to the organization.

While simple in theory, the nuances of the vision can make a difference in how effectively a group works towards harnessing its collective intellect.

### **1. Clarity of Purpose**

Subject C, a software code developer and project manager with Microsoft in the 1990s, emphasized how well-defined objectives at all levels of leadership are important to effectiveness. For strategic vision, selecting a vision that *matches resources with objectives* and works toward creating value is important (personal communication, September 30, 2009). During Subject C’s time with Microsoft, the reasonably achievable objectives were important to keep the developers motivated toward a sense of tangible

purpose. This is not to say that goals should be conservative, because stretching to distant goals and breaking through glass ceilings is a hallmark of smart organizations. However, it is important that everyone can see the figurative brass ring before stretching to reach it. A clear strategic vision can provide the core motivation for a group to work beyond the normal expectations. Karl Albrecht (2003) described this as having “heart” in the organization to push through the inevitable difficulties. Strategic vision does not provide this motivation, but it is hard to imagine an organization with “heart” working toward anything other than a clear objective.

The strategic vision has to make sense from every perspective. That means that the vision is realistic considering the resources available. It is easy to provide a grandiose idea without considering, and articulating, the resources it will take to realize the concept. The vision should provide clarity of purpose that will be pushed through the organization and executed at every level (Albrecht, 2003; Mendelson, 2000). Subject E, a senior vice president for strategy at a large financial planning company, talked about being “ruthlessly focused” on the project goals while working with five-person consulting teams. During intense brainstorming sessions, any thought or effort not related to the task at hand was discarded immediately. The team demanded a disciplined effort to focus all energy toward a solution for the customer. Only with a clear purpose can a team be so ruthlessly focused on its task (personal communication, October 1, 2009). This exaggerated “ruthless” focus allowed the team to tackle complex problems quickly. One can see that a narrow focus encourages quick learning and adaptation if employed in a disciplined manner.

Subject F, an entrepreneur and president of a start-up company, agreed that a strategic vision is an absolute must to focus a company’s objectives in the competitive marketplace. When a vision is crafted properly, it can take away the distracting “noise” of extraneous efforts (personal communication, October 5, 2009). The distractions of “good ideas” can undermine the efforts of the critical work required. Similarly, Subject G, a former company president in the Kinder Morgan Corporation, opined that, “Strategy is much more about what you are not going to do, than it is about what you are going to do.” Subject G continued by explaining that a strategic vision still has a goal to achieve,



but rather than explaining the vision through a written manifesto, the company leadership can narrow the focus by simply removing options. In execution, work aligned to the vision will not be distracted by branch plans that stray from the company's plan. Simply taking away the noise can add depth to the chosen endeavor. Subject G continued, “With 9,000 employees, lots of people see great opportunities that are never otherwise considered [by the leadership team]” (personal communication, October 29, 2009). Finding a way to capitalize on those opportunities is a hallmark of smart organizations.

At Kinder Morgan in the late 1990s, the company decided it would *not* expand into the marketing and trading business with their energy infrastructure despite the apparent profitable results from energy giant, ENRON. Although there were many appealing opportunities to expand into the business, the strategic vision kept the company looking for opportunities other than marketing and trading (personal communication, October 29, 2009). By carefully deselecting avenues of expansion, the team stayed more narrowly focused without the constraints of a blueprint for action. For Kinder Morgan, this was hugely successful.

Haim Mendelson’s research (2000) used organizational focus as one of the five principles to measuring organizational intelligence. The focus mitigated the effects of information overload that seems more prevalent now because of the speed at which information is processed, stored and disseminated. Clarity of purpose helps by defining the tangible tasks required. The emotional response to the strategic vision is significant, too (Thomas, 2000).

## **2. Inspiration**

Everyone wants to feel rewarded for his or her work, and the strategic vision provides one explanation of why other people care about the work being done. Inspiration is an ingredient of organizational intelligence that adds zest to an organization. Working toward a goal greater than any one individual is a motivator for extraordinary effort. At Microsoft, the vision capitalized on the unique place in history in that the software developers found themselves (personal communication, September 30, 2009). The idea that each developer was shaping the way the world interfaced with

computers was an inspiring vision. Subject C talked about the effect it had on his work ethic. As an operating systems developer, the hours were long and the problems were difficult to solve. However, everyone was conscious of the enormity of the projects and the far-reaching effects they expected to have. Subject C said, “Even when I would finish at 10 p.m., anxious to get home for a short night of rest, I would spend the extra hour to write a note sharing insights I learned that may help the Word or Excel developers.” More than a diligent supervisor or bonus pay, working toward a greater goal inspired that kind of extra effort. It was knowing that the extra push was needed to conquer the great challenge faced by the whole team (personal communication, September 30, 2009).

At Rockwell Industries, Chairman and CEO Donald R. Beall, inspired the global technology corporation to become a world-class organization. When introducing a vision statement that had been years in the making, he challenged the corporation to become the best, diversified high-tech company in the world. More emphatically, he said, “Not ONE of the best. THE best,” (Beall, 2008). This is another way to inspire through a strategic vision. The vision expressed and the underlying message communicated influences the tactical execution and the spirit in which it is executed. The Rockwell CEO could have crunched the numbers and figured out what production goal would have placed Rockwell at the top of the diversified high-tech industry, but he chose a different way to articulate the vision. By targeting the emotional commitment of each worker, he likely provided inspiration to thousands of employees.

### **3. Deeply Communicated**

A clear, inspirational vision is not enough. The strategic vision must be deeply communicated throughout the organization (Subject E, personal communication, October 1, 2009). The articulation of ideas is the first step in turning concept into reality. Interviewees consistently emphasized that constant communication of the vision, goals, or values is instrumental in getting the point across. If executed well, it can become a rallying cry for the organization that supports the inspirational part of the strategic vision (personal communication, October 1, 2009). Subject D said, “You can’t communicate

enough,” when referring to the quarterly video presentations he had made and delivered to offices worldwide when he was the chief executive officer. For a global organization, disciplined communication reinforces the strategic vision and is an avenue to bolster the values and credo of the company.

Communication from the leadership was a consistent theme from most of the interviewees. The delivery of the vision is the first step that transforms the ideas into an execution plan. Subject F emphasized the importance of the strategic vision being articulated down to the proper level of management, not just the senior management. He makes an important point about communicating the vision in a way that will resonate with the audience. While the principle vision must be consistent, the message delivered to a group of senior executives will likely be different than the delivery to front-line workers in a company.

## **C. CHAPTER SUMMARY**

In summary, a practical vision that is deeply communicated and inspires the team is a prerequisite for harnessing an organization’s collective intelligence. The vision alone will not build a smart organization, but not providing that clarity of purpose is a sure way to disrupt the effort. It is necessary to have a strategic vision that unites purpose, inspires, and is communicated. The strategic vision is the foundation. Like a building’s foundation, once the vision is properly sized, leveled, and smoothed out, a smart organization can be built upon it.

## V. CULTURE OF MERITOCRACY

### A. CHAPTER OVERVIEW

A meritocracy is defined as, “A system in which the talented are chosen and moved ahead on the basis of their achievement” (Merriam-Webster OnLine, n.d.). This chapter will provide ideas on how to encourage an organizational culture that recognizes individual ideas while employing the intelligence of the entire group. In the house metaphor, this chapter describes the walls, the floors, the plumbing, et cetera, that are the elements inside a house structure, shown in Figure 8. This research will describe the culture of meritocracy as the core structure of the house. How well the culture of meritocracy is built and sustained relates directly to how smart the organization can become. However, in terms of necessity and sufficiency, a culture of meritocracy is necessary for a smart organization but, it does not assure organizational intelligence. Since building an organizational culture is influenced by so many factors, this chapter will focus upon the ideas expressed in the interviews and the author’s personal experience.

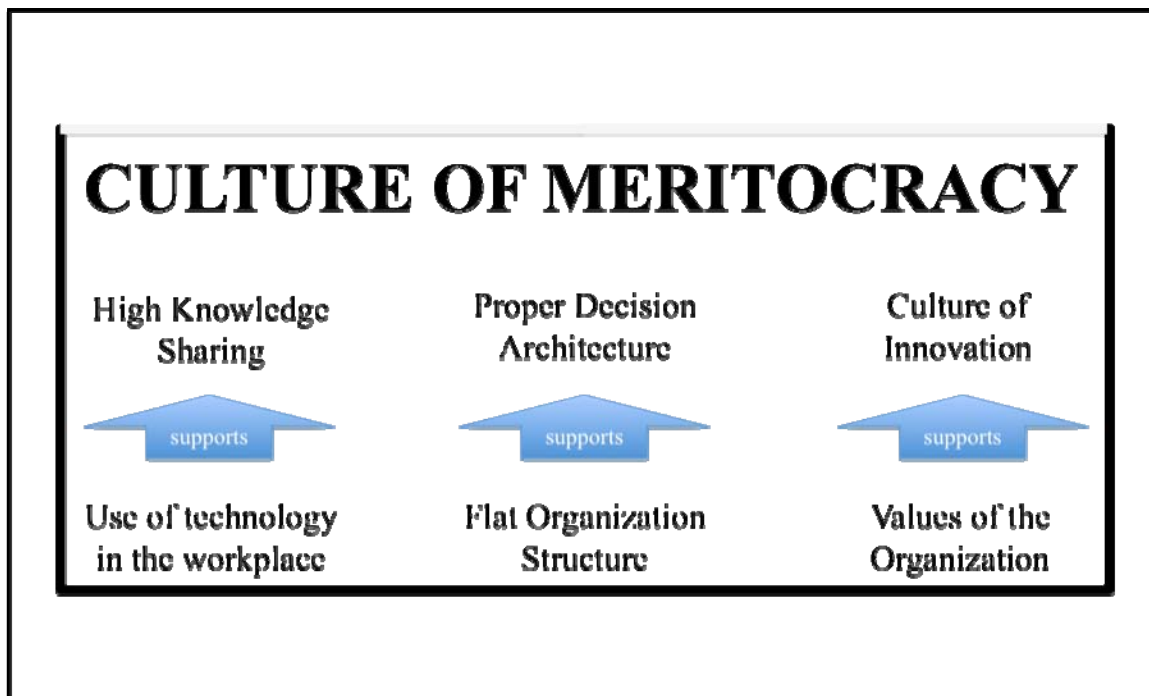


Figure 8. The figurative *structure* of a smart organization

## **B. DESCRIBING A CULTURE OF MERITOCRACY**

Establishing a forum to bring the best ideas to light is one element of building a smart organization. A goal is to create the opportunity to collectively learn and quickly adapt. Embracing individuals based upon their abilities and providing an environment to openly express those ideas is important in harnessing a group's collective intellect. Subject E described a culture of meritocracy where individual's ideas are treasured as a critical piece to most any solution. He goes as far as saying, "It is one's *duty* to dissent" (personal communication, October 1, 2009).

However, the principles of building a culture of meritocracy are simple but not necessarily inherent to the workplace. Striking the appropriate balance between structure and free-form discussion must be tailored to the group. An open attitude toward dissenting views must be supported by a trust in each member that (Subject E, 2009):

- Their voice will be heard.
- They will not be punished for a contrary view.
- It is alright to share radical ideas, even if they will not work.

Subject E believed it so much that he had gavels made for his employees that were engraved with "duty to dissent" on one side and "trust" on the other. To foster the culture that embodies truthful interaction, the values of the company must support this interaction.

Embracing the appropriate "duty to dissent" is a key element of bringing individual minds together in a constructive manner. While it is one thing to say, "All ideas are welcome," sorting and implementation generate their own complexities. Organizations are loaded with subtle resistance to candor unless that resistance is understood and managed. Competition among peers and leader-subordinate power positions can work against a culture of meritocracy where ideas are judged on their individual merits, absent the context from where the idea originated.

## **C. FLAT ORGANIZATION AND PROPER DECISION ARCHITECTURE**

One strength of a flat organization is that information can be passed in such a way that it retains greater purity and accuracy, free from content and process losses inherent in

tall hierarchies. Subject B, a prominent entrepreneur, board member and innovator, discussed the challenges of managing the overwhelming amount of information that can be generated by receiving unfiltered information in a flat organization. The details of the internal processes of a group will influence the effectiveness of the flat organization. The research unveiled some practical anecdotes that are helpful in describing different forms of a culture of meritocracy.

Creating the environment where it is safe to voice an opinion is a deliberate task. One way to encourage candor in a group is by setting clear expectations for each member's role in a particular setting. Subject G was a senior manager Kinder Morgan when it was founded with 175 employees in 1997. Over 12 years, he was part of the transformation as the corporation grew to more than 9,000 employees (Kinder Morgan history, 2009) (personal communication, October 29, 2009). Subject G shared how Kinder Morgan institutionalized their planning process specifically to hear the voices of the team and then provide transparency to decisions. What worked for Kinder Morgan was to clearly state which group was providing the input and which group was making decisions (personal communication, October 29, 2009). The simple declaration of expectations in a meeting manifested in thoughtful dialogue among the company experts. There were two desired effects from this process. One, the environment invited opinion, an important part of effectively harnessing the collective intellect of the group. Two, by going through the decision-making process with the group, everyone understood the premise of the decision and could effectively carry the message back to their respective companies (Subject G, 2009). The transparency of the decision-making process enhanced the communication throughout the organization.

The methodology used in Kinder Morgan evolved as the company quickly grew over a decade. Fundamentally, the internal process to gather information and make decisions was institutionalized in the company. This shows that the process can be successfully scaled to meet the size of the organization. As the corporation grew to 50 times its original size, the process of gathering knowledge in the organization was able to adapt. The process also fit well within the framework of Kinder Morgan's strategic vision. However, Subject G acknowledged that there were circumstances when this

model was not appropriate. For instance, when information was highly concentrated in a few people, a smaller group was needed to act decisively (personal communication, October 29, 2009). This is an important element of the story because it demonstrates that smart organizations must read situations and adapt their own smart-business practices as the environment dictates. There are no cookie-cutter solutions to building a smart organization.

#### **D. VALUES AND A CULTURE OF INNOVATION**

The values of an organization can set the tone and allow for a culture of meritocracy to develop, or not develop. For instance, if a company values hard work as directed by a benevolent dictator, they may be effective in execution, but not considered an organization that harnesses the full potential of its collective intelligence (personal communication, October 5, 2009). Subject A, a former executive, and now an entrepreneur, said, “CEOs who build smart organizations spend a lot of time reinforcing collateral values.” These “collateral” values shape how the organization interacts (personal communication, September 25, 2009). Subject A went further in saying, “[Leaders] communicate through declarations, personal interaction with the team, and reinforcement through detailed articulation of the values. Most important are the actions of the leader.” Subject A was emphatic that, “The unspoken values lived by the leader have the greatest effect on developing the company’s culture” (personal communication, September 25, 2009).

Subject A reinforced the culture of meritocracy by describing how important saying and living the right values are to an organization’s ability to harness its collective smarts. In the high-tech industry, innovation has a shelf life measured in days, not months. In a dynamic environment, a leader’s emphasis should be on *how the team interacts*, not necessarily on *what the team is doing*. Specifically, a leader should be concerned about ensuring the right people are in the room sharing ideas rather than concern over which ideas are actually being discussed. If the “how” is working well, the “what” will work itself out properly. Providing the framework for the interaction is a

necessary part of organizational intelligence. Future ideas and success in the uncertain environment will spawn from smart organizational processes.

### **1. IronPort Systems “Food Fight”**

A story from IronPort systems showcases a leader that spent time building values on *how* a team can harness its collective intellect. IronPort, an e-mail and Web security start-up company at the time of this anecdote, developed hardware to serve as a spam filter for large corporation e-mail systems. Through articulation of the company values, the CEO clearly appreciated the input of the team and recognized that the future of the company depended upon getting all the ideas on the table and selecting only the best. Similar to Subject E’s custom gavels (“trust” and “duty to dissent” engravings), a manifestation of his trust in the team was how the CEO ran a brainstorming meeting. He described the appropriate employee interaction in the room as a “food fight.” If anyone had an idea to inject, they literally threw their dinner roll at him! This broke down the barriers, encouraged openness, accelerated communication, and got all the politically incorrect, but valuable, comments on the table (personal communication, September 25, 2009). The CEO lived the value of respecting everyone’s opinion. His unconventional style of meeting was a great example of “walking the talk.” Not all meetings need to be as dramatic as IronPort’s, but the leader clearly respected the team’s ideas and he lived that value zealously.

The “food fight” concept demonstrates that breaking down the barriers, or silos of knowledge, is a deliberate process. As IronPort wrestled to break into the industry, the innovation team was tasked to develop a new product. However, the breakthrough idea came from the sales and marketing team who helped adjust the product to reach the appropriate levels in the customer’s corporate structure (personal communication, September 25, 2009). The solution arrived in a way not anticipated by the management. By including the sales and marketing team in the innovation team’s workgroup, the challenge was overcome, IronPort achieved its breakthrough, and ultimately they sold IronPort to Cisco in 2007 with a substantial return on investment (Garretson, 2007; personal communication, September 25, 2009).



Leaders have clear goals and values tailored to the environment. What works in the computer industry may not work in the auto industry. The “food fight” meeting worked well in the early days of IronPort, but it is not a one-size-fits-all solution. A smart organization will allow the collective intelligence to surface relative to the environment. The important lesson in the story is that the candid interaction is based upon the espoused and lived values of respect for each other’s ideas. Without the values in place, the “food fight” meeting is nothing but a messy lunch break.

## **2. Rockwell Credo**

The Rockwell credo from 1994 (Appendix E) included beliefs that encouraged a quick-learning, adaptive organization. In the context of values that support a culture of innovation, the credo expressed, “Respect for the individual,” and, “Creativity, innovation and initiative” (Beall, 2008). Similarly, Subject D emphasized how important it was that management cared for the ideas of every employee. Along with each individual having a voice, each individual should have a sense of accountability. This is one example of how the values can support a culture of an organization.

## **E. USE OF TECHNOLOGY IN KNOWLEDGE SHARING**

One of the least emphasized topics in the interviews was the use of technology in the workplace. Even Subject C, a former Microsoft developer, did not emphasize the use of technology in building a smart organization. As a general topic, most interviewees appreciated that technology can positively influence how efficiently ideas are exchanged (Hansen, 2003). Technology is an enabler to the knowledge sharing processes within a culture of meritocracy.

The interviewees did not emphasize the use of technology but the questionnaire received three respondent answers. Judging the context of the discussions and the quantitative data, it suggests that smart companies use technology to improve their knowledge sharing but that the technology itself is not a distinguishing factor. More important than technology are the values and structures used to promote interaction.

## **F. PITFALLS IN BUILDING A CULTURE OF MERITOCRACY**

There are pitfalls in building a culture of meritocracy that need to be carefully avoided. Subject E discussed his experience when an employee became too enthusiastic in his duty to dissent. Maturity and consistent leadership can combat those anomalies. Subject G understood the Kinder Morgan planning process as one that fell deliberately between two extremes, autocracy and democracy. Except for the rare instances when information is highly concentrated, leaders can make the mistake of assuming they know more about a subject than they really do. In most cases, leaders can err in not soliciting the expert information and miss the collective intellect of the group. The other extreme is a boundary-less forum where everyone has an equal voice in the decision. The democratic approach to decision making is not a model for quick-learning, adaptive organizations. It is important to establish the meritocracy of ideas in the planning process with a clear understanding of how the deciders will use that information.

## **G. CHAPTER SUMMARY**

A culture a meritocracy is influenced by many elements. The house metaphor shows the core elements and how they can create an environment where ideas and actions are incorporated from any contributor. A flat organization demonstrates the irony that one needs to *release* control of stove-piped knowledge in order to *harness* the collective intellect. Values of an organization set the tone of personal interaction more than any structure or process. Importantly, how a leader follows their values makes the difference. The structure of the house is filled with mutually supporting parts, just like a culture of meritocracy is built by many elements supporting each other.

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## VI. INCENTIVES AND REWARDS

### A. CHAPTER OVERVIEW

A smart organization will align its incentives to encourage behavior that binds the collective intelligence. The tricky job of establishing incentives that reward those who are effective workers while avoiding unintended negative effects is worth discussing in this research. Subject G cuts right to it by saying, “incentives are incredibly important because if you get them wrong, they can destroy everything” (personal communication, October 29, 2009). In the previous chapters, strategic vision and culture of meritocracy were discussed because of the dramatic effect those elements can have on building a smart team. The incentives and rewards are supportive to the vision and culture of a smart organization. Intuitively, incentives and rewards have a dramatic affect on the motivation of an individual to participate in an organization, too.

Continuing with the house metaphor, incentives and rewards are the roof that protects the foundation and structure of a smart organization as shown in Figure 9.

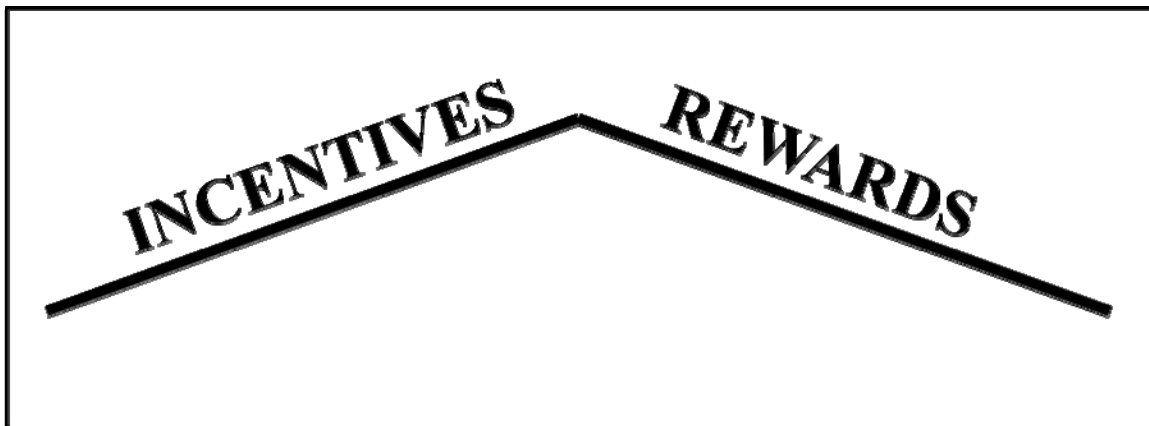


Figure 9. The figurative *roof* of a smart organization

The roof protects the structure that was built so carefully. With the right roof, the structure is unaffected. Without the roof, or a roof with faulty tiles, the structure can be ruined by the weather. In terms of necessity and sufficiency, the roof is a necessary element of a smart organization but, like the other parts of the house, the roof will not assure organizational intelligence. This chapter will discuss incentives in the context of

building a smart organization, that includes establishing the incentives and rewards structure that helps develop a team that learns quickly and adapts to the environment.

Three parts of an organization's incentive plan will be discussed.

- Reinforcing the values of the organization.
- Setting an implicit tone that individuals are appreciated.
- Measuring performance properly.

The desired outcome is a reward system that reinforces the strategy and culture that more directly contributes to organizational intelligence. Misplaced incentives have the potential to deconstruct the positive momentum. It is important to recognize that the rewards and incentives must not be divorced from the strategy and culture. In fact, they should be aligned as closely as possible (Mendelson & Pillai, 1999).

## **B. REINFORCING THE VALUES OF THE ORGANIZATION**

Just as Chapter V discussed the importance of living the proper values, the organization's incentives must support those values. Subject B described how people want to be proud of their organization, and emphasized that economic incentives are important. He continued that the incentives tie to the ethics and values of a company—to what you do and how you do it (personal communication, September 25, 2009). This idea is in congruence with all other aspects of organizational intelligence discussed so far. Encouraging the proper interaction among individuals is the intent and incentivizing to that end is important.

Subject A reinforced this by saying that, “[Incentives are] very important. They need to be aligned to the values, especially the respect for each individual.” Properly aligned incentives actually simplify the rewards system. If the incentives are out of alignment with the company desires, then what usually develops is a complicated, confusing set of rules to compensate for the misalignment. Like the U.S. tax code, that has hundreds of lines of detailed exceptions; an incentive plan that is extremely complicated can obfuscate the intended outcome (personal communication, September 25, 2009).

## **C. IMPLICIT TONE THAT INDIVIDUALS ARE APPRECIATED**

Feeling as if the company exists to support the employee, vice the employee to support the company, sends a strong message that the organization appreciates its workers. A servant-style leadership can be effective for drawing individuals into the fold, and motivating them to work hard. A smart organization can show great brilliance when individuals contribute in ways that even the most clearly defined reward systems cannot cover.

An organization's values include how the individual is regarded. Not only is the interaction among the team important but also the team's relationship with top management, e.g., managers as team role models.

Microsoft indicated that it looked for people who were both smart and motivated. Interestingly, motivation was a more important consideration than brilliance. Since Microsoft was the vanguard of developing code, a motivation to learn new skills was more important than years of experience. The willingness to learn and work very, very hard on project was paramount—and the hard work was encouraged and recognized (personal communication, September 30, 2009). Microsoft was characteristically mindful of the conditions to motivate their employees. Subject C outlined three significant motivators that propelled the code development engine at Microsoft: peer encouragement, appreciation for efforts, and being a part of something exciting.

### **1. Peer Encouragement**

The peer encouragement was a pressure to keep up with the development team. “Nobody wanted to be the weakest link,” commented Subject C. One method of encouraging the peer review was a weekly project meeting where different developers on the team would present their code and talk through what was working well and poorly. All members of the team were expected to come prepared to discuss, critique, and leave the meeting having learned from their peer. The one-hour meeting provided constructive advice for the project. “Performance pressure” is how Karl Albrecht (2003) describes it in his seven traits of organizational intelligence.

## **2. Appreciation for Efforts**

One distinguishing aspect of the Microsoft Company was its ability to develop programming code better than anyone else in the world. Microsoft seemed to know what was important to the technical developers. Recognizing the value of uninterrupted work while troubleshooting complex programming code, each developer had an office with a door. Providing an office to every employee broke the mold of modular cubicle spaces in one large workspace. The company also provided a subsidized dining facility that offered complimentary snacks and beverages. Most importantly, developers got the feeling that the company supported their efforts, not that the developers supported the company (personal communication, September 30, 2009). Subject C commented that, “There was almost a sense of indebtedness to Microsoft for making it so nice to work there.” The developers reciprocated with productive work.

## **3. Being Part of Something Exciting**

The excitement of reshaping how the world worked with computers was a substantial incentive to perform (personal communication, September 25, 2009). The sense of being part of something greater than any one individual could accomplish was a genuine motivator. Albrecht calls it “shared fate” where the esprit de corps becomes a non-monetary incentive when working on a team project. This was first discussed as an important part of forming a strategic vision but it also influences the incentive plan of an organization.

## **D. PROPERLY MEASURING PERFORMANCE**

Some of the interview discussions highlighted the importance of properly measuring performance to ensure that rewards support the actions of a smart organization. To protect the culture of meritocracy, the system should not reward tenure over the merit of one’s accomplishments for the team.

A key to Microsoft’s successful incentives and rewards program was the supervisor’s ability to fairly assess the workers. In this case, the project leader was the immediate supervisor to the developers and they were the technical leaders for the

project. By placing a technical expert in charge of the technicians, more of the right people were rewarded. The “jedi” developers could not fool the “jedi” masters. In visits to other fortune 500 companies, technical innovation seemed stymied because the managers did not understand how to encourage and reward the right technicians (personal communication, September 25, 2009).

Rockwell also invested in their assessment tools. They used a detailed “Leadership assessment” form that is firmly aligned with the vision and credo. Rockwell even went so far as to develop a “leadership specification” list to identify future senior executives (Beall, 2008). Measuring the desired performance is instrumental in building a smart organization.

#### **E. MONETARY VERSUS NON-MONETARY REWARDS**

To encourage, or incentivize, knowledge sharing, the rewards must be more than just a substantial paycheck. Subject B addressed this topic specifically by saying “Motivating ownership is more important than just the economic incentives.” Building a smart organization requires commitment from the group. Financial rewards encourage compliance with the company framework while the “ownership” is derived from the emotional sentiment evoked by actually conducting the work (Thomas, 2000). This intrinsic reward could come from the pride in craftsmanship or sense of accomplishment while extrinsic rewards are the cash or platitudes presented by the organization (Thomas, 2000). To build a team that both complies with the rules and is committed to the effort requires both extrinsic and intrinsic rewards.

The early days of Microsoft provides a good example of rewarding both the extrinsic and intrinsic motivations. As a caveat, Microsoft had not yet exploded financially so the stock options discussed in this anecdote were seen as generous, but their monetary value far exceeded what was expected at the time. The stock option rewards supported collaborative interactions by the programming developers. One way Microsoft was successful in software development was by specializing on projects. However, the specialization risked isolation between the developers. For example, the operating systems developers could become secluded from the word processing



developers. The stock option incentive, an extrinsic reward, encouraged exchange between the operating systems and word processor developers because a successful release of Microsoft Word would boost the stock option valuation for the operating system developers, too. As a result, there was a clear incentive for developers to collaborate. However, the interview discussions revealed that the stock option incentives did not dominate.

Using the same story in Chapter IV when Subject C stayed late at work to write a helpful note to fellow code developers. “You cannot manage that kind of interaction, it has to be more deeply rooted,” commented Subject C. He continued, “It was a true meritocracy. The rewards weren’t just about money. Being assigned to the most exciting, desirable project was a huge reward” (personal communication, September 30, 2009). Because it was such a revolutionary time for computing, assignment to an interesting project, and the intrinsic reward of working on an interesting project, became more important than the monthly paycheck (personal communication, September 30, 2009). This highlights that the incentives are a necessary element of a smart organization, but they are not sufficient to make the organization intelligent. The actions of the individuals are what truly make the organization smart.

The group-based incentives influenced collaborative behavior (Mendelson & Pillai, 1999). Instead of encouraging individual performance on a team effort, the system rewarded the group for sharing their knowledge.

## **F. CHAPTER SUMMARY**

As the roof of the metaphorical house, incentives and rewards protect the culture of meritocracy. A proper system will have a binary result. It will either support or undermine the effort. The extrinsic rewards of money and platitudes must be complemented with intrinsic rewards encouraged by both the strategic vision and the manner in which the incentives are established. While the incentives and rewards play less of a role in building a smart organization, they are necessary to maintaining a smart organization.

## VII. CONCLUSIONS

### A. CHAPTER OVERVIEW

The house metaphor was useful to describe how elements of a smart organization might influence each other. The author will introduce a hierarchy pyramid to show how different aspects of a smart organization build upon one another. This chapter will also discuss the applications of these principles to military organizations.

### B. PYRAMID OF ORGANIZATIONAL INTELLIGENCE

The core elements of a smart organization build upon one another. If viewed as layers, the concepts discussed in Chapters IV, V, and VI can be combined in a hierarchal fashion. The top layer is an innovation, or the product of a smart organization that has learned and adapted faster and better than its competitors to a changing environment.

#### 1. Layers in the Pyramid

Figure 10 shows the layers in the pyramid of organizational intelligence. This stand-alone pyramid represents the building blocks needed to harness an organization's collective intellect, resulting in innovation becoming both a goal and a process.

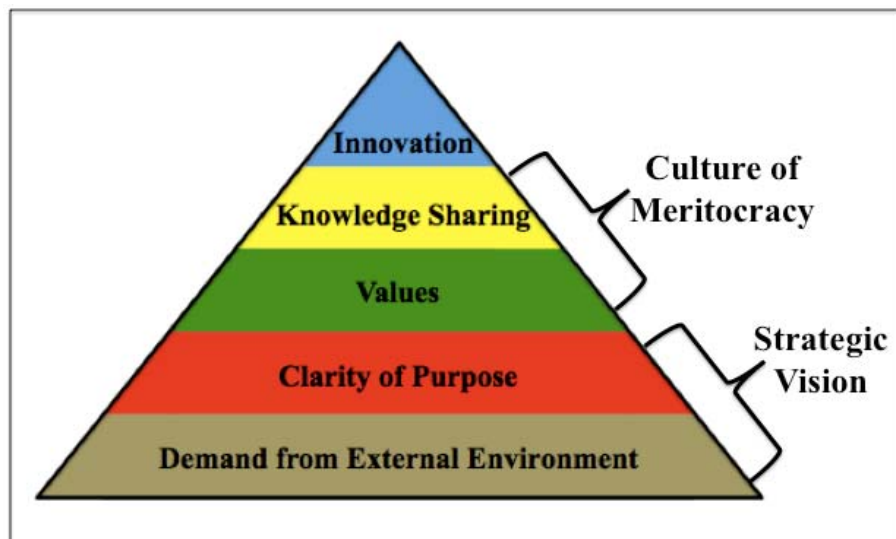


Figure 10. Layers in the pyramid of organizational intelligence

***a. Strategic Vision***

The two base layers of the pyramid represent organizational strategic vision. External environmental demands create needs to be fulfilled, such as a new service or product, or in a military sense, a new tactic or new use of an existing technology. Requirements will drive the purpose of the organization and must be articulated clearly (Mendelson & Pillai, 1999). The demands of the external environment, along with other elements discussed in Chapter IV, shape the purpose and contribute to the strategic vision of an organization.

***b. Culture of Meritocracy***

Building upon the strategic vision, the values espoused and enacted by an organization can contribute greatly to a group's ability to share knowledge. Chapter V explained how values contribute to knowledge sharing that can result in a culture of meritocracy. Knowledge sharing can be argued as the second most important contributor to a smart organization, a conclusion supported by the questionnaire results in Chapter III.

***c. Innovation***

Innovation, defined as, "a new idea, method, or device" is the peak of the pyramid (Merriam-Webster OnLine). This is the breakthrough achieved by harnessing and focusing the knowledge of multiple contributors, including the chance appearance of a change-oriented personality to lead and nurture a successful innovation (Boot, 2007).

**2. The Supporting Bridge for the Pyramid**

Chapters III and VI discussed incentives and rewards as a protective roof to shield and encourage a culture of meritocracy. In the hierarchy pyramid, the incentives and rewards are a supportive bridge shown in Figure 11.

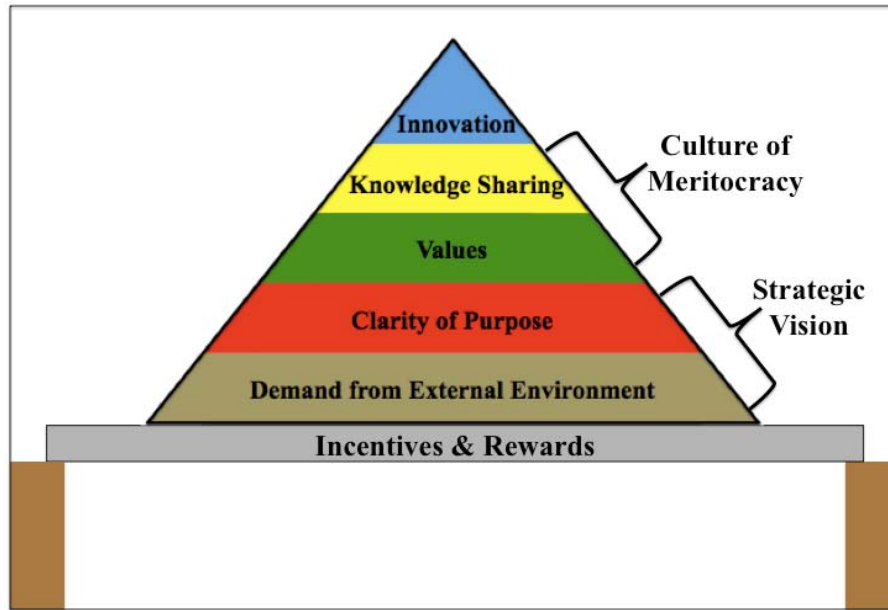


Figure 11. Pyramid supported by a bridge of incentives and rewards

The integrity of the bridge—the leverage attained through meaningful incentives—can be designed to support other essential building blocks. Flaws in the bridge—weak, insufficient or misaligned incentives—can negatively impact all else, even allowing a smart organization to collapse.

### 3. Speed of the Ascent to Innovation

A measure of organizational intelligence may be related to how quickly an organization can build and sustain the pyramid layers. Speed of innovation is the race to superiority in a competitive market, or battlefield. Being too slow can translate into bankruptcy in the economic market, and national defeat in conflict and war. Figure 12 represents the iterative process that starts with recognizing a new demand in the first layer, then purposefully developing platforms to accommodate and encourage innovative behaviors.

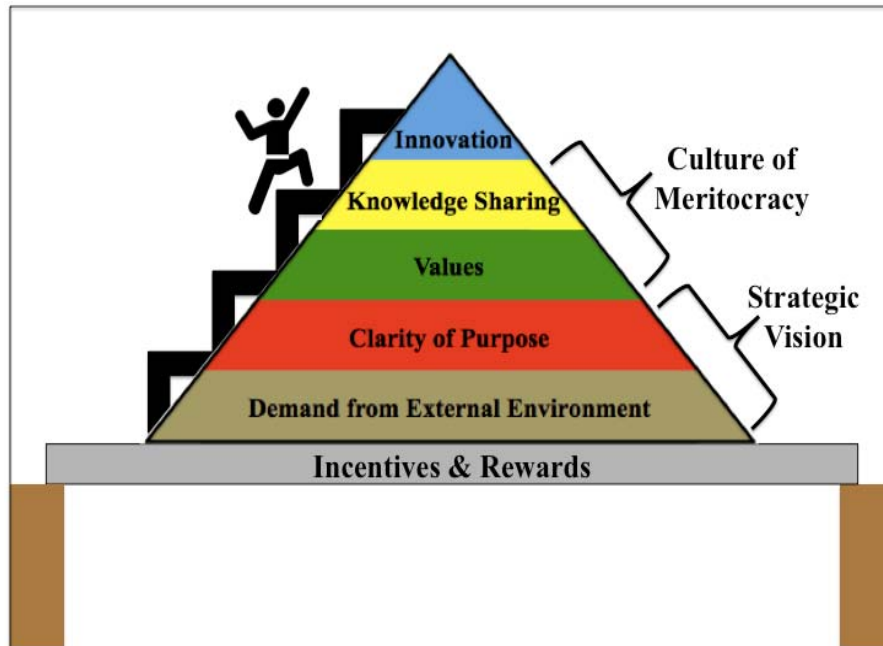


Figure 12. Ascent of the pyramid of organizational intelligence

The speed of ascent represents how quickly the organization can collectively learn and adapt to situations. A highly intelligent organization will become proficient in learning and adapting at all levels of the hierarchy.

### C. AUTHOR'S TAKE-AWAYS

The attributes discussed throughout this paper describe fundamental conditions that may be necessary to build a smart organization. They are frameworks to influence human behavior towards collective intelligence. Strategic vision is necessary to get the collective effort moving in the same direction. Without vision, efforts can easily become fragmented, whereby well-intentioned employees and groups push hard in multiple directions. A culture of meritocracy can be the engine for bringing best ideas forward, but once proffered, innovations must be sorted, fielded and sustained. A meritocratic organization does not assure brilliance but the research is conclusive that encouraging ideas based upon their merit is a core element of a smart organization. Appropriate incentives are most clearly a necessity from beginning to end, i.e., incentives to try new things needs to be protected, and failing is not always bad. In short, incentives can have

binary effects of either supporting or disrupting the attraction, development and sustainment of collective intelligence. Yet, incentives alone are not sufficient to create an intelligent organization.

What is sufficient to build a smart organization? How can an organization harness the intelligence of each member of its group such that the collective generates sufficient synergy and behaviors to fuel innovation? The author concludes that **selecting the right people for the organization is paramount to building a smart organization.**

The crux of organizational intelligence is how the individuals interact with each other. The elements discussed throughout this research appear to be necessary conditions to enable collective intelligence. Only the right people actually living the vision and culture can assure a smart organization. The pyramid of organizational intelligence is the infrastructure that allows the right people to engage with each other in a way that makes the sum of their pieces of knowledge greater than any one person's intellect. Most importantly, the organization as a whole then learns and adapts faster than it would without the infrastructure and the right people.

Smart people do not necessarily make a smart organization. The *right* people working in a framework of a strategic vision, a culture of meritocracy and aligned incentives can create an organization that virtually sprints up the pyramid to innovation.

#### **D. APPLICATION TO MILITARY UNITS**

The principles for building a smart organization apply to military organizations as much as they do to private industry. Military leaders can influence almost every aspect of the pyramid. Considerations in a military context will be discussed using the pyramid of organizational intelligence as a model. However, there are inherent characteristics of the military that may present challenges in applying organizational intelligence.

##### **1. Inherent to the Military Hierarchy**

The U.S. military organization is a dichotomy of innovation rooted in stability. It is part brilliant innovator, developing systems such as the tactical employment of unmanned aerial vehicles on the modern battlefield. Its preference for continuity and

predictability has been shown in many ways throughout military history, e.g., cavalry officers resisted tanks, and U.S. carrier battlegroups are still predominant long after their WWII original purpose (Boot, 2007). In an environment where change is rapid and turbulent, an organization must have receptors to signal change and strategic flexibility to respond to a broad range of situations (Nadakarni & Narayanan, 2007).

The military is expected to answer the Nation's call whenever needed. This requires a stable, predictable force. With core competencies that have matured over time, the military has a set of proven strategies to fulfill a slow changing requirement. Hierarchical organizations promote strategic stability and are common in slow-changing industries where a playbook of strategies can be used (Nadakarni & Narayanan, 2007).

Despite its hierarchical organization, the military has a clear requirement to be a quick-learning, adaptive force. The role and mission of the military requires both stability and innovation. At times, the military needs a structure to harness the collective intelligence in order to see the complex environment of the battlefield—to gather perspectives and incorporate ideas based on their merit, not the rank of the individual from whom they come. At other times, the military needs a stable military force, always ready to perform operations proven by decades, if not centuries, of experience.

The following paragraphs will offer ideas for practical employment of the organizational intelligence concepts discussed in this research.

## **2. Practical Application of Organizational Intelligence to the Military**

The following ideas are from the perspective of a squadron-sized unit of 200 to 600 people. While most of the concepts can be scaled to units larger and smaller, this discussion is intended for a tactical maneuver unit.

### ***a. Clarity of Purpose for Military Units***

“Commander’s guidance” is the best comparison to “clarity of purpose” in working towards organizational intelligence. While it is often difficult for a military leader to provide clarity in an uncertain environment, guidance that removes extraneous noise may lead to a faster resolution of issues. Sometimes, there is a reluctance to issue

guidance because it is subject to a changing situation. However, this research argues that improving the clarity of purpose will accelerate the units learning speed and adaptability, *especially* in a changing situation.

In formulating commander's guidance, an important consideration is to remove distractions—take away the noise. In preparing for a combat deployment, there may be overwhelming requirements to prepare for every possible mission. Setting forth guidance that prioritizes the mission requirements builds depth in capability by focusing the resources of the squadron on a limited number of tasks. This normally results in an emphasis on certain skills and a reduction in training others. As a practical matter, it is the responsibility of the leadership team to interpret the higher command's vision into a *squadron vision*. For example, if a Naval Special Warfare, or SEAL, squadron is preparing for deployment, that squadron is likely to conduct operations within another commander's area of responsibility. Let's say that area commander has issued guidance to 1) capture the enemy combatants, 2) rebuild civilian infrastructure, and 3) train the host nation military. That guidance interpreted may prioritize the squadron's efforts to A) capture enemy *leaders*, and B) train the host nation *reconnaissance units*. By narrowing the focus to *capturing enemy leaders* and *training the reconnaissance units*, the squadron can work uniformly towards that end. This would focus the effort of the squadron and take away the *noise* of building infrastructure and training police.

Using the same example, the squadron guidance must tie the relevance of capturing enemy leaders and training host nation reconnaissance units to a mission that provides some level of inspiration. The military mission, by the nature of its responsibility, often provides the inspiration with minimal effort needed by the leadership. The military has a strong foundation of motivated, disciplined volunteers that makes providing inspiration more accessible than in private industry.

Once the guidance is established, it must be deeply communicated to the entire squadron. The most effective commander's guidance is one that is reinforced until it becomes a consideration in every decision within the squadron.



***b. Culture of Meritocracy—Decisive Humility***

The hierarchal structure and rigid discipline of the military appears contrary to a culture of meritocracy. However, within the structure of enlisted and officer ranks, one can establish a culture of meritocracy to harness collective knowledge. Respect for individuals and judging input on the merit of the idea can be applied at every level of the organization.

At a squadron level, the values lived by the leadership team will set the tone for meritocracy. An authentic respect for each individual's expertise and opinion is a necessity in building a smart organization. Military rank aside, the demeanor and tone of the leadership team will either encourage or discourage collaborative exchange. In a culture where "sir" and "ma'am" are protocol and decisiveness is desired trait, leaders must be disciplined in their effort to respect others' perspective. For the squadron leaders, officer and enlisted, meritocracy can be encouraged by leader humility—an openness to new ideas. In the high-stakes arena of tactical military operations, decisions often must be made quickly. In these cases, humility alone will not suffice. Applying the concepts of this research to the squadron, a leadership trait described as "decisive humility" respects the advice of others without compromising the requirement to make tough decisions.

Most often, a squadron is organized for combat effectiveness, not necessarily to maximize its collective intelligence. However, sharing information like a flat organization can still be accomplished at the squadron level. A significant effort may be required to encourage the flow of information among each subordinate leader. The important tenets of a flat organization in the military are:

- Direct communication throughout the squadron results in a more pure information flow.
- Direct communications do not abdicate any responsibility of subordinate leaders.

Pure information exchange allows guidance from the squadron leader to pass directly to all members, unfiltered by interpretations of a hierarchal chain of command. Likewise, ground truth from junior members of the squadron passes to the

leadership unfiltered. Importantly, even though communications pass up and down the hierarchal structure freely, responsibility remains with the respective leaders. Knowledge is shared while each element maintains its responsibilities for completing the mission. Knowledge sharing does not equal responsibility sharing.

During deliberate discussions, such as military planning, setting clear expectations of who contributes and who makes decisions encourages a culture of meritocracy. Just as importantly, transparency in how the final decision is made will empower those included in the process to pass along the background and intent of the decision made.

While at first glance the culture of meritocracy appears to rival military order and discipline, the principle can be artfully woven into a squadron's daily practices.

*c. Incentives and Rewards*

A squadron leader must focus on the non-monetary incentives and rewards. The military pay system is established by legislation and cannot be adjusted at the discretion of military leaders. However, one should emphasize aligning performance review rankings with the values of the squadron. In terms of building a smart squadron, the value of respecting each individual's opinion is a necessity. Practically speaking, ranking individuals in their performance reports is difficult but is also an incentive to perform (because good performance reports lead to promotions, higher level jobs and pay increases.) A typical challenge is ranking between superb technical experts who lack leadership and average technicians with team building leadership. The squadron expectations must be made clear and the rankings should then align with the values and expectations articulated. The intent is to maintain consistency between the values and incentives to ensure rankings do not undermine the squadron's efforts.

The intrinsic rewards in the squadron are often inherent, but a squadron can bolster these rewards by highlighting the significant value of military tasks. Individual actions may be lost in the grand scheme of an operation. Breaking down how the role of the squadron fits into the larger context of an overarching military effort may

be all that is required to get the sense of accomplishment felt from a job well done. While the intrinsic rewards cannot be manufactured, a squadron leader can highlight what already exists.

## **E. CHAPTER SUMMARY**

This research concludes that organizational intelligence can be built in business and military organizations by a deliberate effort. The background research and data collected did not reveal a specific tool that if applied, would result in profound change. On the contrary, the research reinforced that proper execution of core leadership principles such as, articulating a clear strategic vision, improves the organizational intelligence of a group. Harnessing a group's collective intellect is more about focusing on the fundamental practices of an organization than developing sophisticated, new practices. If one builds a framework supportive to organizational intelligence and has people willing to work in that framework, an organization can grow to become collectively brilliant.

## APPENDIX A. INTERVIEW QUESTIONS

Individuals with high IQ scores are more likely to succeed in the workplace because of their innate skills and ability to learn new skills faster than others. I'm studying organizational intelligence—the collective intellect of an organization—that includes the ability to learn, grow, and adapt in a changing environment.

I am trying to identify the traits of smart companies that have excelled in dynamic industries and see what my colleagues in Naval Special Warfare operations can learn from this to put to work in their environment (including the battlefield).

1. Are there any divisions or elements in your organization that stand out as being smarter than others?
2. If you look around the broader business world, what organizations come to mind as being higher IQ than others?
3. What do you think are the best indicators to use to judge the IQ of an organization?
4. What kind of culture do smart organizations have?
5. In your experience, in what ways do more intelligent organizations handle employee hiring and retention differently from less intelligent ones? Do HR policies make any difference?
6. To what extent do you think an organization's intelligence is contingent on other factors?

-----Questionnaire-----

7. In sum - in your view – what does a smart organization look like?
8. Anyone you recommend I speak with?

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## APPENDIX B. INITIAL QUESTIONNAIRE

To what extent does each of the following affect organizational intelligence?

(a) Strategic vision / Organizational focus

1	2	3	4	5
not important				very important

(b) Highly competitive environment

1	2	3	4	5
not important				very important

(c) Proper sizing of the organization

1	2	3	4	5
not important				very important

(d) High use of technology at work

1	2	3	4	5
not important				very important

(e) Decentralized decision architecture

1	2	3	4	5
not important				very important

(f) Incentives and rewards

1	2	3	4	5
not important				very important

(g) High knowledge sharing culture

1	2	3	4	5
not important				very important

(h) Networked with partners

1	2	3	4	5
not important				very important

(i) Formal training

1	2	3	4	5
not important				very important

(j) Culture of innovation

1	2	3	4	5
not important				very important

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## APPENDIX C. FINAL QUESTIONNAIRE

**To what extent does each of the following affect organizational intelligence?**

Annotate three priority “1,” three priority “2,” and leave 6 blank

- (        ) Highly competitive environment
- (        ) Proper sizing of the organization
- (        ) Strategic vision -- Organizational focus
- (        ) High use of technology for work and interaction
- (        ) Proper decision architecture
- (        ) Incentives and rewards
- (        ) High knowledge sharing culture
- (        ) Networked with partners
- (        ) Formalized training program
- (        ) Culture of innovation
- (        ) Flat organization structure
- (        ) Attuned to external environment



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## APPENDIX D. QUESTIONNAIRE RESULTS

	<b>Weighted Score</b>	<b>Raw Score</b>	1	2	3	4	5	6	7
Highly competitive environment	<b>5</b>	<b>10</b>	5						
Proper sizing of the organization	<b>5</b>	<b>10</b>	5						
Networked with partners	<b>5</b>	<b>10</b>				5			
Formalized training program	<b>10</b>	<b>20</b>			5			5	
High use of technology for work and interaction	<b>20</b>	<b>30</b>			10	5		5	
Flat organization structure	<b>20</b>	<b>30</b>		5			10		5
Incentives and rewards	<b>25</b>	<b>30</b>	5		10			10	
Culture of innovation	<b>30</b>	<b>50</b>	10	5		5	5		5
Proper decision architecture	<b>30</b>	<b>40</b>		5			5	10	10
Attuned to external environment	<b>35</b>	<b>50</b>		10	5	10	5		5
High knowledge sharing culture	<b>55</b>	<b>70</b>	10	5	5	10	10	5	10
Strategic vision -- Organizational focus	<b>70</b>	<b>70</b>	10	10	10	10	10	10	10

Priority #1 = 10 points

Priority #2 = 5 points

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## APPENDIX E. ROCKWELL CREDO

FORMATION, EVOLUTION AND TRANSFORMATION OF ROCKWELL

### THE ROCKWELL CREDO: WHAT WE BELIEVE

**We believe** maximizing the satisfaction of our customers is our most important concern as a means of warranting their continued loyalty.

**We believe** in providing superior value to customers through high-quality, technologically advanced, fairly priced products and customer service designed to meet customer needs better than all alternatives.

**We believe** Rockwell people are our most important assets, making the critical difference in how well Rockwell performs; and, through their work and effort, separating Rockwell from all competitors.

**We believe** we have an obligation for the well-being of the communities in which we live and work.

**We believe** excellence is the standard for all we do, achieved by encouraging and nourishing:

- Respect for the individual
- Honest, open communication
- Individual development and satisfaction
- A sense of ownership and responsibility for Rockwell's success
- Participation, cooperation and teamwork
- Creativity, innovation and initiative
- Prudent risk-taking
- Recognition and rewards for achievement

**We believe** success is realized by:

- Achieving leadership in the markets we serve
- Focusing our resources and energy on global markets where our technology, knowledge, capabilities and understanding of customers combine to provide the opportunity for leadership
- Maintain the highest standard of ethics and integrity in every action we take, in everything we do

**We believe** the ultimate measure of our success is the ability to provide a superior value to our shareholders, balancing near-term and long-term objectives to achieve both a competitive return on investment and consistent increased market value.

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